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ABSTRACT

This document is a summary of a study conducted by the Puerto Rico Vocational Advisory Committee to determine the effectiveness of the Vocational-Technical Education (VTE) programs in that country over a 1-year period. Predicated on the philosophy that improvement in the quality of education is dependent on continuous and comprehensive evaluation, this followup study is based on previous Council evaluation assessments. Resulting recommendations include: (1) Efforts should be made to equip the Research and Curriculum Unit with the necessary professional personnel with budgets appropriated accordingly, (2) Consultive services should be sought for external appraisal of career education projects, (3) Provisions should be made with industry to arrange short-term faculty internships, (4) Recommendations and findings of the Advisory Council should be used to a greater extent by State personnel in developing occupational education programs, (5) Efforts should be made to accelerate the implementation of the VTE information System with data updated continuously, and (6) Cooperative work experiences should be developed so as to involve students more. (SN)

ED 078178

PUERTO RICO
THIRD ANNUAL EVALUATION REPORT 1972

ADVISORY COUNCIL
ON
VOCATIONAL AND TECHNICAL
EDUCATION

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PUERTO RICO

THIRD ANNUAL

EVALUATION REPORT

1972

ADVISORY COUNCIL

ON

VOCATIONAL AND TECHNICAL

EDUCATION

José R. López
Executive Director

Orlando de Aragón
Chairman

November, 1972

Commonwealth of Puerto Rico
ADVISORY COUNCIL ON VOCATIONAL AND TECHNICAL EDUCATION
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ORLANDO DE ARAGON
Chairman

LUIS A. FERRE
Governor

JOSE R. LOPEZ
Executive Director

November 15, 1972

Dr. Tania Viera de Torres
Chairman, Board for Vocational
and Technical Education
Department of Education
San Juan, Puerto Rico 00919

Dear Chairman :

In accordance with Public Law 90-576 (Section 120-23C), The Puerto Rico Advisory Council on Vocational and Technical Education herewith presents to you, for transmittal to the Board for Vocational Education, the Annual Evaluation Report on Occupational Education for fiscal year 1972.

The Council wants to call your attention to the federal statutory requirement that the report be transmitted unchanged, but with appropriate comments by the Board, to the Commissioner of Education, United States Office of Education, and to the National Advisory Council on Vocational Education.

It is the hope of the members of this Advisory Council, that the Report will serve to support and strengthen occupational education in the Commonwealth of Puerto Rico.

Sincerely,

Orlando de Aragón
Chairman

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THIRD ANNUAL
EVALUATION REPORT
(Fiscal Year 1972)

PUERTO RICO ADVISORY COUNCIL
ON VOCATIONAL AND TECHNICAL EDUCATION

Legal Basis

Federal Law (U.S.Congress)-P L 90-576
October 16, 1968
Amendments to the Vocational Education Act of 1963
Title I Section 104 (B)

State Advisory Council: "Any State which desires to receive a grant under this title for a fiscal year, shall establish a State Advisory Council which shall be appointed by the Governor. . . . . "

AND

Law of Commonwealth of Puerto Rico - P.R. 133
June 28, 1969
Vocational Education Act, 1963

"A State Advisory Council on Vocational and Technical Education is hereby created, with the purpose of providing the adequate climate for the training and development of manpower necessary to meet the demands of industry, commerce, and agriculture, suitable to the economic growth of Puerto Rico. . . . . "

November, 1972

ORGANIZATION AND FUNCTIONS
OF THE
ADVISORY COUNCIL

Structure of the Council

The Council is composed of 21 members, appointed ad-honorem by the Governor of Puerto Rico, for a term of three years. One third of the members are alternated every year.

The Council has representation of :

1. Industrial, Business and Agricultural Management
2. Economic Development Agencies
3. Manpower Development Agencies
4. Local Education Agencies
5. Higher Education Institutions
6. Organized Labor
7. Technical Institutes and Community Colleges
8. Special Handicapped and Rehabilitation Programs
9. Vocational Programs Administration
10. Public Interest

The Advisory Council works closely, but independently from the Administration of the Vocational and Technical Programs. The Council has its own budget, appropriated by the U.S. Office of Education. The State Department of Education acts as fiscal agent.

The Council appoints its Executive Director and professional staff. Consultants and Technical personnel are contracted when needed.

The Council holds monthly regular meetings, and executive meetings as may deem necessary, for business. Several committees - legislation, evaluation, planning - assist the Council in carrying out its purposes. Members of the Council make visits to training centers, industrial establishments, and occupational institutions, in discharging their duties. Council members and the Executive Director attend conferences and meetings in the United States, Puerto Rico and elsewhere.

The Council publishes a monthly bulletin - Puerto Rico ACVTE Bulletin - to disseminate information among its members, the National and State Councils and the educational and occupational institutions of Puerto Rico.

Purposes and Duties of the Council

The Advisory Council on Vocational and Technical Education has the following purposes and duties :

a. Advise the State Board for Vocational and Technical Education on the establishment of public policies - goals, objectives and priorities - for the development of Vocational and Technical Education in Puerto Rico.

b. Advise the Board for Vocational and Technical Education in the formulation of the Annual Plan and in Long-range Plans for the operation of the programs, services and activities.

c. Evaluate the effectiveness of vocational and technical programs, as set forth in the Plans, in terms of manpower development, employment needs, and training opportunities.

d. Prepare an Annual Evaluation Report and submit it to the U.S. Office of Education, the National Council, the Governor of Puerto Rico, and the Secretary of Education, through the State Board for Vocational and Technical Education.

e. Provide the State Board with recommendations for improvement or changes concerning the development of vocational programs, services and activities. The State Board has to inform what provisions have been taken regarding the recommendations of the Council.

f. Prepare periodic reports and position papers for the Governor, the State Legislature, the Secretary of Education, the State Board for Vocational Education, the National Advisory Council and the U.S. Commissioner of Education.

g. Hold public hearings, at least once a year, in which the public is invited to express their reaction concerning the vocational and technical programs.

h. Disseminate information to government agencies, educational institutions, professional organizations, industrial and business associations, labor organizations, civic groups and general public.

i. Prospectively, perform the same responsibilities with respect to Occupational Education Programs in post-secondary institutions, as stemmed from Title X of the Higher Education Act of 1965, as amended, by P L.-92-318, of 1972.

MEMBERS OF THE ADVISORY COUNCIL

Appointed by Governor, Luis A. Ferré, for a three year term

NAME	REPRESENTING
Eng. Orlando de Aragón, Chairman Asst. Executive Director, Puerto Rico Land Administration	Management (Agriculture)
Mrs. Virginia T. Belaval, Vice-Chairman Asst. Secretary for Planning Department of Education	Educational Planning and Development
Mrs. Francisca Borges, Executive Committee Superintendent of Schools Cidra, Puerto Rico	Local School System (Area of disadvantaged students)
Dr. Fred V. Soltero, Executive Committee Chancellor, University of P.R. Mayaguez Campus	Institutions of Higher Education
Dr. Miguel Echenique, Executive Committee Director, Division Social and Economic Analysis, Planning Board	Economic Development Agency
Mr. Angel L. Alicea, Executive Committee Director, Apprenticeship Division Department of Labor	Department of Labor
Mr. Peter Kryzanowski, Executive Committee Farmer (Agri-business) Aguas Buenas, Puerto Rico	Public Interest
Mrs. Carmen R. Amaral Director, Central High School Santurce, Puerto Rico	Local Education Agency
Mr. Abidam Archilla Owner, Paper Corporation Santurce, Puerto Rico	Management (Business)
Mr. Antonio Baez Bermejo Director, Technological Institute San Juan, Puerto Rico	Technical Education

Dr. Mohinder Bhatia Consultant, Human Resources Development	Economic Development Agency
Mr. Pelegrín Busquets Director, Technical Institute College Mechanic Arts, Mayaguez	Post-secondary College
Mrs. Hilda Grana Bonilla Director, Program Handicapped Children, Department of Education	Special Handicapped Programs
Eng. Fernando Felices President, Empresas A. Martínez & Co. Santurce, Puerto Rico	Management (Industry)
Mrs. Isabel R. Fernández Superintendent of Schools Guaynabo, Puerto Rico	Local School System (Area industrial growth)
Eng. Carlos A. Molina Industrial Consultant, San Juan	Public Interest
Eng. Hermand Monserrate Building Contractor, San Juan	Management (Construction)
Mrs. Rosinf C. Requena Director, Employment Service Department of Labor	Human Resources Agency
Dr. Luz M. Torruellas Professor of Economics and Consultant University of Puerto Rico	Manpower Development Agency
Mr. Jorge Treviño District Director, United Steel Workers, AFL-CIO-PR	Organized Labor
Mr. David Malavé Superintendent of Schools San Germán, Puerto Rico	Public Interest
Mr. José R. López Planning and Evaluation Specialist	Executive Director

FOREWORD

This Third Annual Evaluation Report of the Puerto Rico Advisory Council on Vocational and Technical Education, is based upon previous years recommendations by the Council, as well as upon studies done during the current fiscal year 1971-72. It is submitted as a comprehensive, objective statement on the status of occupational education in the Commonwealth of Puerto Rico.

The Report is directed to the U.S. Office of Education and the National Advisory Council on Vocational Education, through the State Board for Vocational and Technical Education, as required by statutes.

The Report is also directed to the attention of the Governor of Puerto Rico, the Legislature, the Board for Vocational Education, the State Board of Education, the Secretary of Education, the directors of Vocational and Technical Education, the officers of educational institutions, the local occupational committees, and the general public - all of whom have a vital role in establishing public policies in the important field of occupational education.

The Council relied upon the reports prepared by the VTE directors, according to the Guidelines set forth, as well as upon information collected from other sources, to prepare this Evaluation Report. Data reflecting Programs development and accomplishments were made accesible to the Council for analysis. Programs objectives and actual performance were analyzed and compared to determine benefits received. Action taken by the VTE Programs on last year recommendations was a major concern. Factors that have influenced the success or failure of the recommendations were particularly studied.

The Council hopes that this and previous reports will result in a better understanding of the need for increasing and improving Vocational and Technical Education programs, activities, and services to the people of the Commonwealth of Puerto Rico.

The Council extends special commendation to Dr. María S. Lacot and her staff, for the vigorous leadership in developing and executing the State's Program. The Council and the staff also express deep appreciation for their cooperation.

José R. López
Executive Director

CONCERNS ON EVALUATION

The Puerto Rico Advisory Council on Vocational and Technical Education has been concerned with the kind of evaluation required of the Vocational and Technical Programs. Evaluation should be actually a process, rather than a "post-mortem" activity. That is why, due to the broadness and complexity of the Vocational plans and programs, indepth analysis is exceedingly difficult.

In previous years, Puerto Rico as well as other states has used external evaluators. Also it has used graduate students to conduct interviews as part of the evaluation process. Both of these procedures have some limitations. People from out-of-state are not aware of the constraints and limitations of local programs. Non-educators are looking for "impressions of the product", rather than for the educational process of developing occupational skills, attitudes and knowledge. The attitudes of the students and the relevance of education in the individual are difficult to measure. It is not limited to the quantitative elements; it should attempt also to delve into the qualitative aspects of evaluation.

On the other hand, Advisory Councils should be concerned primarily with policy development and implementation. Council members are the voice to and of the general public and not "experts" in the operation of vocational and technical training. Nevertheless, Council members, representing different insights into the occupational framework of the State, are in a better position to look at the main pitfalls, and make recommendations for their improvement.

Moreover, the Advisory Council feels that, it should neither overweight nor supplant the evaluation process that the vocational programs have designed to measure their own achievement and progress. Even more, the Council feels that each Vocational program and service should carry out its own evaluation responsibilities, leaving to the Council the general assessment of the whole program in a broad examination of their development and accomplishments.

Thus, in accord with these premises and in order to have a clear criteria for the FY 1971-72 Evaluation Report, in determining the effectiveness of the VTE Programs development and achievement, the Advisory Council discussed with the Directors of the Programs a set of Guidelines, that follows :

GUIDELINES

A - VTE Planning

Clear understanding of the VTE 1972 Plan :

1. Pointing out specifically the :

   a - goals
   b - objectives
   c - priorities, and
   d - projections

2. As set forth in the Plan, in terms of :

   a - student needs
   b - employer needs - employment opportunities
   c - manpower development for Puerto Rico

      1 - specific needs of population areas
      2 - specific needs of occupational areas

B - General Assessment

Broad examination of VTE programs development and accomplishments :

1. To what extent were the Plan's goals, objectives, priorities and projections met in terms of :

   a - student needs
   b - employer needs
   c - manpower development of Puerto Rico ?

2. To what extent does the Plan's goals, objectives, priorities and projections represent an improvement over last year (1971) ?

3. What action has been taken by the VTE programs on the recommendations made by the Advisory Council to improve VTE programs for 1972 ?

4. What factors have affected the fullfilment of the recommendations ?

C - Specific Evaluation

Effectiveness with which people and their needs were served :

1. What was done about occupational awareness and orientation (career education) ?

2. To what extent were vocational education opportunities available to people of the :

   a - Secondary level
   b - Post-secondary level
   c - Adult level
   d - Handicapped people ?

3. To what extent did the schools assist in job placement of graduates ?

4. What indicators are there to show that the vocational programs are adequately meeting the students' needs ?

5. What indicators are there to show that the employment needs have been adequately met by the VTE programs ?

6. What coordination of training opportunities is provided among agencies offering vocational training ?

D - Research Work

Research Studies made during the year, as set forth in 1972 Plan.

SUMMARY OF RECOMMENDATIONS

The recommendations which follow are supported by the reports of the Program Directors and based on the findings made in this evaluation.

The recommendations made last year are made part of this Report with the purpose of follow-up. Those recommendations, together with this year's recommendations, should be the concern of the VTE Program Administration for next year's planning.

Recommendation 1 .

> The Advisory Council recommends to the VTE Administration the reinforcement of the Research and Curriculum Unit with the necessary professional personnel, and furthermore, that provisions be made in the budget for the accomplishment of its operation.

The Research and Curriculum Development Unit is paramount for Vocational and Technical Education. The research studies made, and those that need to be made, the curriculum projects developed, and those that need to be developed, call for a highly specialized unit with professional personnel of the highest quality.

Besides, it is time to have more systematic evaluation of the VTE programs and projects. This requires the designing of evaluation plans, the preparation of measuring instruments, the training of field personnel, and the furnishing of the materials necessary to assure the effectiveness of the evaluation.

Recommendation 2.

> Concerning the Career Education Program, the Advisory Council recommends the VTE Administration, to :
>
> a. Secure consultative services for an appraisal of the projects in Career Education, so that definite approaches might be selected to deal with the problem in Puerto Rico. These services may include industry people, to determine the effectiveness of the projects; and
>
> b. In the meantime, take some steps to face actual conditions, such as to provide broader attention to the elementary level students in the Career Education projects, and expand the Course on Introduction to Occupations to all school districts.

The VTE Programs have been developing several projects with the purpose of detecting different ways to deal with Career Education. The projects are directed to different target population, and have different objectives and procedures. Some of them have already shown certain quality and achievement, but no clear outcomes are yet definite.

The process of instilling career awareness in the elementary school as presented in the Career Education Model adapted for Puerto Rico is difficult, and needs the involvement of the whole school system, including the academic teachers and administrators, as well as the parents.

The Course on Introduction to Occupations has proven to be of value to students in becoming aware and exploring the World of Work in relation to their needs and interests. The Course intends to lead youngsters to discover productive means of earning a living, which is basic to every individual.

Recommendation 3.

> The Advisory Council strongly recommends that provisions be made with industry to have more VTE instructors and counselors attend summer sessions working in industry, as a definite way to acquaint themselves with the latest processes and working conditions of the new technology, and with the impact of industry for career awareness in students.

The professional growth of instructors in VTE programs is fostered mainly through university courses and in-service training. Last year, a very limited number of teachers (seven) participated in actual industrial training.

The Sixth Report of the National Advisory Council in relation to the training of Guidance Counsellors — Counseling and Guidance: A Call for Change — recommends that the "Departments of Education should require work experience outside of education for school counsellors." Even the Report suggests that "individuals with rich background in business, industry and labor, should be infused into the counselling system."

Recommendation 4.

The Advisory Council feels that the Secretary of Education and the Board for Vocational Education, as well as the State Board of Education and the Governor of Puerto Rico, may utilize to a greater extent the potentials of the Advisory Council in establishing public policies when it refers to the development of occupational education in Puerto Rico.

The Constitution of the Commonwealth of Puerto Rico gives power to the Secretary of Education to administer the Public School System, including the issuing of norms, rules and by-laws.

During the current year, the Secretary of Education issued new Norms for the Organization of Vocational Programs in the High Schools of Puerto Rico. Those norms are equivalent to public policy.

Recommendation 5.

The Advisory Council, in relation to the collection of data for planning and evaluation purposes, recommends the VTE Administration; to :

a. Accelerate the implementation of the VTE Information System, in such a way that the VTE Programs may have the basic information available for FY 1973-74 planning and evaluation;

b. Verify and update the information collected by the System, periodically, thereafter.

The VTE Administration has decided to implement an Information System or Data Bank, making use of professional services from the Center for Vocational and Technical Education of Ohio State University, and the Electronic Center of Statistical Data of the Department of Education.

The Advisory Council is very concerned with the collection of reliable information which is needed for the preparation of the VTE Plans, as well as the data required for the evaluation of the programs. The information should be up-to-date, accurate and reliable, and be collected in a short time.

Recommendation 6.

The Advisory Council, in relation to indicators that may show the VTE Programs are meeting the needs of the students and of manpower, recommends the VTE Administration to :

a. Consider the conclusions reached at in the analysis of Manpower Needs and Censuses of Manufactures Reports made by the Department of Labor, in planning for next year vocational offerings and services;

b. The Advisory Council reiterates the recommendation made last year, in the sense that students may have at least a semester work experience in industry. This year, specific emphasis is placed on fostering still more the cooperative programs with industry for the training of production workers.

In the Guidelines for the Evaluation Report, the Advisory Council manifested its concern on how the VTE Programs are meeting the needs of students and employers. This Evaluation Report has presented the highlights of the Censuses of Manufactures, and of Manpower Training Needs Report, prepared by the Department of Labor of Puerto Rico.

The Censuses of Manufactures Report presents the conditions of actual employment in industry. The Manpower Training Needs Report points out the growing importance of manufacture from the standpoint of our economy. An analysis of both reports may provide the information required for effective planning to meet the manpower needs.

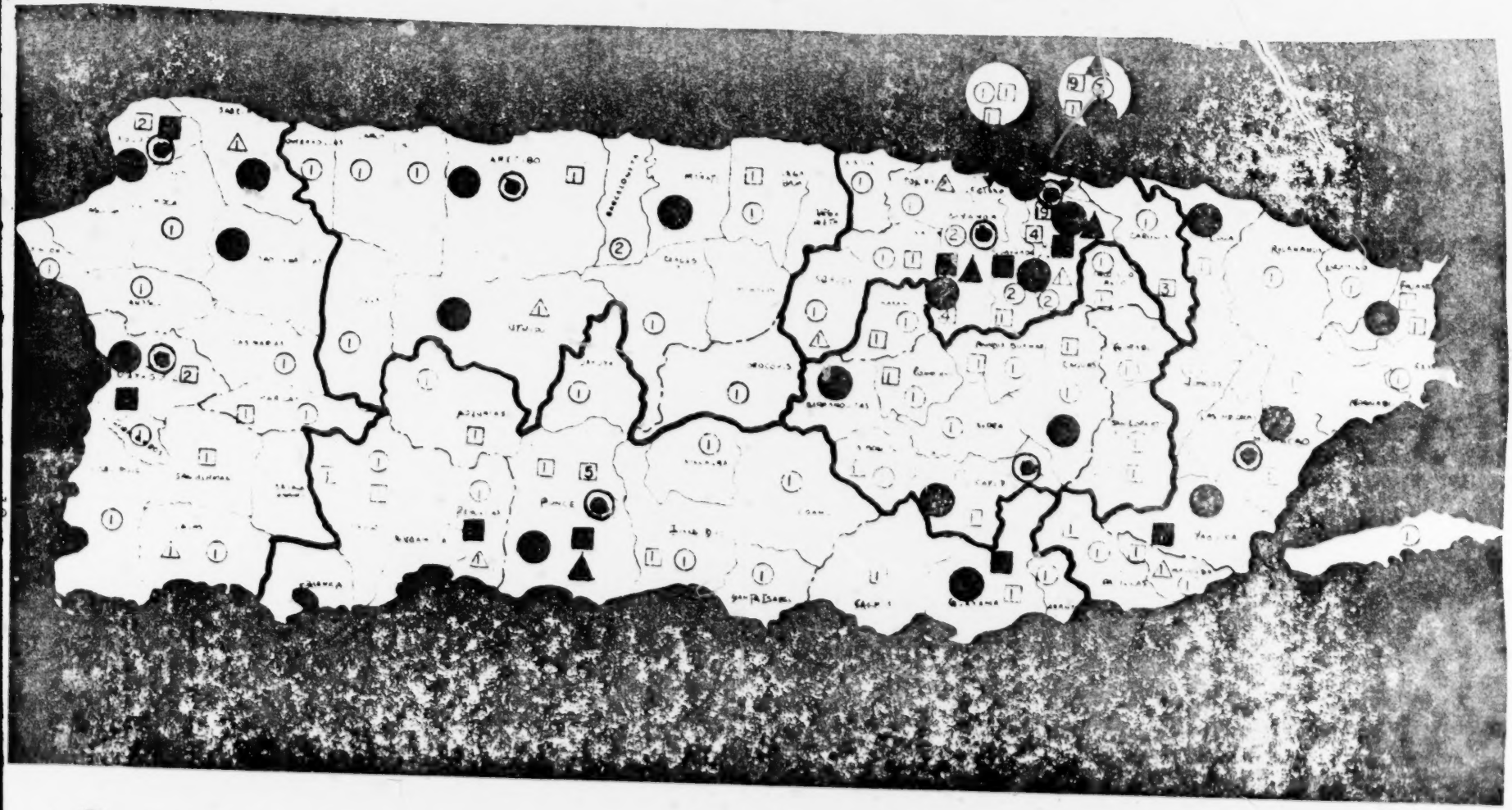
Recommendation 7.

The Advisory Council wants to emphasize to the VTE Administration, in relation to the development and accomplishment of the plans set forth, that:

a. The degree of consistency between what is planned and what is produced or achieved is a sound indication of the quality of planning and the quality of accomplishments. Projections and forecasting of program achievement and clearly stated goals, objectives and priorities set forth in the planning process serve the administration to implement them effectively.

b. The implementation of new programs and the expansion and continuation of existing ones should be based on appropriate profiles which satisfy the needs ascertained from an effective evaluation, with a systematic basis.

VOCATIONAL AND TECHNICAL CENTERS IN PUERTO RICO



- Vocational and Comprehensive High Schools (20)
- Manpower Multiple Skills Centers (10)
- Technological Institutes: State & Municipal (3)
- Regional Colleges (University System) with Technical offerings (8)
- High Schools with some Vocational offerings (60)
- Special Vocational Centers for Adults (70)
- Agri-Business Centers (10)

Table I

GOALS OF VOCATIONAL EDUCATION

The primary goal of Vocational Education is to supply the demands of the labor market. If the economic system provides incentives attractive enough to draw students into particular programs, there is a good reason to establish them. Thus, the first step in the planning process of vocational programs is to forecast or be well informed of the supply and demand of jobs in each area: both geographically and occupationally.

Students considerations such as the development of the individual and students characteristics, interests and capacity are also relevant to a school system, but are at a second level in vocational education. If the economic system provides attractive incentives, it will motivate people to get trained for a job. The broad areas of occupational education are ample enough to fit students of different characteristics. Thus, the second step in the planning process of vocational programs is an effective guidance and cour selling service.

Curriculum content, teaching methods and techniques are relevant to the product obtained in vocational training. Wages and job satisfaction are relevant, but the worker's performance is of paramount importance to the employer. The economic structure will support institutional training as far as the employers needs are satisfied. Thus, the third step in the planning process of vocational programs include teachers, curriculum, equipment and facilities for training.

To what extent the priorities and projections set forth in the plan were met in terms of manpower needs, employment opportunities, occupational awareness and orientation, and efficiency derived from training, will give the basis for a sound evaluation and assessment of program development and accomplishment. The economic structure will provide attractive incentives in proportion to the industrial output. The concept of efficiency includes the learning of the skills in a trade which underscores the quali ty of vocational education. Thus, the fourth and summarizing step in the planning process of vocational programs is the provision of adequate criteria and instruments to measure the performance of trainees.

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Governor

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Executive Director

RESOLUTION OF THE ADVISORY COUNCIL ON VOCATIONAL AND TECHNICAL EDUCATION ENDORSING AND ENCOURAGING YOUTH ORGANIZATIONS IN VOCATIONAL EDUCATION

Whereas, the Vocational and Technical Programs of the Commonwealth of Puerto Rico have been sponsoring and creating Vocational Youth Organizations, in which more than 40,000 students are already participating as Future Homemakers of America (FHA), Future Farmers of America (FFA), Future Business Leaders of America (FBLA), Vocational Industrial Clubs of America (VICA), Distributive Education Clubs of America (DECA) and Industrial Arts Clubs (IAC).

Whereas, these Youth Organizations contribute to the essential preparation of vocational programs students, because they provide opportunity to develop leadership qualities, motivate the young people toward more civic responsibility, and develop individual and desirable character traits which make them better producers, consumers and homemakers.

Whereas, these Youth Organizations serve to complement the theoretical and practical teaching in the classroom and vocational shops, because they provide means by which the students participate in further development of skills which will enhance their capability for employment in industry, business and agriculture.

Whereas, the present Vocational Youth Organizations in Puerto Rico have worked efficiently, celebrating annual conventions and activities, and participating in vocational skills contests that have motivated the interest of students and instructors.

Therefore, BE RESOLVED, by the Advisory Council on Vocational and Technical Education of Puerto Rico, to:

1. Congratulate, most heartily, the directors and instructors of the Vocational Programs for the initiative and encouragement that they have given to these Youth Organizations in Puerto Rico: Future Homemakers, Future Farmers, Future Business Leaders, Vocational Industrial Clubs, Distributive Education Clubs and Industrial Arts Clubs;

2. Estimulate and encourage the participation of Vocational Education students in the activities prepared by these Youth Organizations, and offer them the cooperation and endorsement of the Advisory Council on Vocational and Technical Education.

3. Bring to the attention of the local educational authorities, the public agencies, the civic groups and the vocational teachers preparation institutions, the importance of these Youth Organizations and other similar ones that may be created in the future, for the attainment of the objectives of occupational education, and request their support and encouragement.

4. Send copy of this Resolution to the Governor of Puerto Rico, the Secretary of Education, the Directors of Vocational Education and to the Teachers Advisors and Presidents of each State Vocational Youth Organization in Puerto Rico.

5. Make this Resolution be published in the newspapers and other public media in Puerto Rico; and send a copy, translated into English, to the National Advisory Council, the State Advisory Councils, and the U.S. Office of Education officials in Washington, D. C.

Given, today July 16, 1972, in San Juan, Puerto Rico

José R. López
Executive Director

Orlando de Aragón
Chairman

STATISTICS ON PUBLIC SCHOOL SYSTEM 1971 - 72 *

A - Population of Puerto Rico

Total Population (1970)	2,689,932
Total Unemployment	10-12 %
Unemployment 16-24 year (youth)	24 %
Population 16-24 years, out of school or unemployed (estimated)	70,000

B - School Enrollment

Day School Enrollment

Public	697,410 students
Private	90,717 "
	788,127 students

These represent 83.5% of the total school population (6 - 18 years)

Vocational and Adult Enrollment

Vocational and Technical	210,750
Adult	56,737

C - School Retention (Public Schools)

Average number of years of schooling completed	6.96

Averages by Geographical Areas :

Metropolitan	8.88 (San Juan)
Southern	6.49 (Ponce)
Northern	5.74 (Arecibo)
Western	5.74 (Mayaguez)
Eastern	9.74 (Humacao)

From every 100 students that entered first grade in 1959 - 60 :

70.0 completed 6th grade in 1964 - 65
52.3 " 9th " " 1967 - 68
33.7 " 12th " " 1970 - 71

Table II

D - Budget for Public Instruction

State Funds -	Operational	$244,122,216	
	Construction	16,400,000	
			$260,522,216
Federal Funds -	Operational	$ 55,516,470	
	Construction	4,870,858	
			$ 60,387,055
Grand Total -			$320,909,271

Table III (a)

E - Budget for Vocational and Technical Education

Purpose	State	Federal	Total
General Administration	$ 264,743	$ 3,456,035	$ 3,720,778
Trades & Industry	5,056,827	1,901,195	6,958,002
Technical Education	1,220,954	519,540	1,740,494
Vocational Agriculture	1,374,592	487,320	1,861,012
Office Occupations	2,020,604	1,116,180	3,136,784
Distribution & Marketing	392,504	162,025	554,529
Home Economics	5,212,721	654,560	5,867,281
Industrial Arts	4,815,402	- - - -	4,815,402
Counseling & Guidance	1,884,287	5,266,000	7,150,287
Manpower Training	100,000	2,815,830	2,915,830
Veterans Training	447,200	- - - -	447,200
Totals	$22,789,834	$16,378,685	$39,168,519

Table III (b)

F - Other VTE facts

Number of teachers and personnel (all programs)	2,681
Number of Vocational Schools	8
Number of Technical Institutes and Centers	9
Number of Comprehensive High Schools	12
Number of Shops in other High Schools	53
Enrollment in Vocational Courses (regular)	151,119
Enrollment in Vocational Courses (special)	59,631

* Information obtained from different offices at the Department of Education

NORMS FOR THE ORGANIZATION OF VOCATIONAL PROGRAMS

The Secretary of Education, making use of the powers invested upon him by the Constitution of the Commonwealth of Puerto Rico, issued in last May, 1971, to be effective for the School Year 1971-72, Circular Letter No. 134-70-71, establishing new Norms for the Organization of Vocational Programs in the High Schools of Puerto Rico. Said Norms state that students enrolled in vocational and technical courses shall have to approve a total of 15 to 17 units for graduation, depending on the program.

All students will have 10 required academic courses, distributed as follows :

English	3 units
Spanish	3 units
Social Science	2 units
Natural Science	1 unit
Mathematics	1 unit

All other courses, to complete 15 to 17 units, shall be taken in the vocational offerings. Students completing the required academic and vocational courses shall be eligible to a High School Diploma and a Vocational Certificate stating the vocational area studied. Several exceptions are made to current students.

These Norms are based on the premises that all Vocational and Technical Programs shall provide to the students ample opportunity to learn an occupation, together with the academic preparation that shall facilitate them to continue advanced technical or university studies. The courses of general education, common to all individuals, are a necessity for the intelligent confrontation with everyday problems. "With these new Norms", the Secretary says, "the School System of Puerto Rico fulfills the purpose of providing multiple offerings, where the students may be trained in an occupational area without defeating the aims of a general culture".

Norms issued by the Secretary of Education are equivalent to a public policy. The Constitution of the Commonwealth of Puerto Rico gives power to the Secretary of Education to administer the School System of Puerto Rico, including the issuing of norms, rules and by-laws.

Following are the specific requirements for each Program :

Program	Units of Instruction Required	Electives	Total
Secondary Level			
Trades and Industry	15		15
Cooperative Industrial	14	1	15
Office Education			
Shorthand	17		17
Bookkeeping	17		17
General Office	15	1	16
Distributive Education	14	2	16
Post-Secondary Level			
Office Education			
Bilingual Secretary	72		72
Bookkeeping	71		71
Typewriting	57		57
General Office	29		29
Shorthand	22		22
Distributive Education			
Sales Management	78		78
Marketing Administration	44		44
Salesmanship	40		40
Tourist Guides	37		37
Technical Education			
Technology (different fields)	72		72

A three-hour daily shop is required for the occupational area in the Secondary Level. The units in the Post-Secondary Level refer to University semester credits equivalence. Several exceptions are made to students attending schools organized in double shift, and to students combining some of the program's schedules.

Recommendation

The Advisory Council feels that the Secretary of Education and the Board for Vocational Education, as well as the State Board of Education and the Governor of Puerto Rico, may utilize to a greater extent, the potentials of the Advisory Council in establishing public policies when it refers to the development of occupational education in Puerto Rico.

PUBLIC HEARING

The Advisory Council on Vocational and Technical Education held a public hearing on March 23, 1972, in Bayamón, Puerto Rico. It was a joint activity with the State Board for Vocational Education. Its purpose was to get the views and ideas of all interested persons regarding the vocational offerings in Puerto Rico. Ample information was given in the local papers inviting people to participate.

The hearing was succesful. Although the attendance from industrial, commercial and agricultural enterprises was not large, the ideas and recommendations presented were very useful. Participants were given free opportunity to express themselves and make comments. Directors of VTE programs who were present gave some orientation regarding the highlights of vocational education during the current year.

The recommendations presented for improving VTE in Puerto Rico may be summarized as follows :

1. A new name, and separate funds and organization for Occupational Home Economics are imperative. Homemaking in Home Economics is quite different from Occupational Home Economics. The first, comprises general education courses pretending to prepare consumers, home makers and housewives, while the second, comprises industrial skills in Food Management, production and service. Even housekeepers, hotel maids, catering and bartenders need occupational skills different from those of housewives. These occupational courses should be taught by instructors with good experience in industry and should be made attractive to male youngsters who are not willing to attend Home Economic courses. There is a demand for these occupations in the present labor market.

2. Diesel Mechanics shops should be updated in equipment and materials. Training should be upgraded. Instructors should come more in contact with industrial practices, since present Diesel equipment is very sophisticated. U.S. Industry of Puerto Rico has prepared an intensive course for training people in using the "Caterpillar". They are willing to cooperate with the schools in these modern techniques.

3. A study should be made of the machine shop courses. The skills involved require much practice and accuracy. It is like sculpturing in iron, steel or bronze. It is an art and a trade. These courses include several specializations after the general mechanics course. The study should be made with the purpose of determining (1) the diversification of the content, (2) the duration of the courses, (3) the amount of practice and technology required, and (4) the training sequence.

4. To delete from the Electrical Appliances course the units on Refrigeration and Air Conditioning. Employers require a license to hire personnel for these specialties. The course on Refrigeration and Air Conditioning affords the student to obtain the license.

5. Conduct periodic occupational surveys by geographical areas served by the Vocational Schools to open new courses needed or delete courses of little occupational demand. This is a must in areas of rapid industrial growth and change, as Bayamón and others.

Public hearings are the feedback, the input of the general public to the Advisory Council. Wide views are collected by geographical regions, by target population, by educational responsibilities, and by social and economic impact. Public hearing reflect the voice of the clientele of vocational programs, from the standpoint of the employer and of the to-be-employed. They may be used to prevent the distortion of the effectiveness of educational programs, when training is overweighted by the impression of the educators.

CAREER EDUCATION PROGRAMS

One of the main concerns of the Advisory Council during the year has been the development of Career Education programs. The topic has been discussed in several meetings, book and publications have been read by the Council's members and staff, and the various definitions - whether Career Education is equivalent to vocational education, or combines both the vocational and academic - have been reviewed. Several questions have been in the mind of the members of the Council. Several models on Career Education have been studied.

The Advisory Council has interpreted Career Education to fit the total involvement of education at all levels, according to the following model :

CAREER EDUCATION MODEL
FOR PUERTO RICO
(Adapted by
José R. López

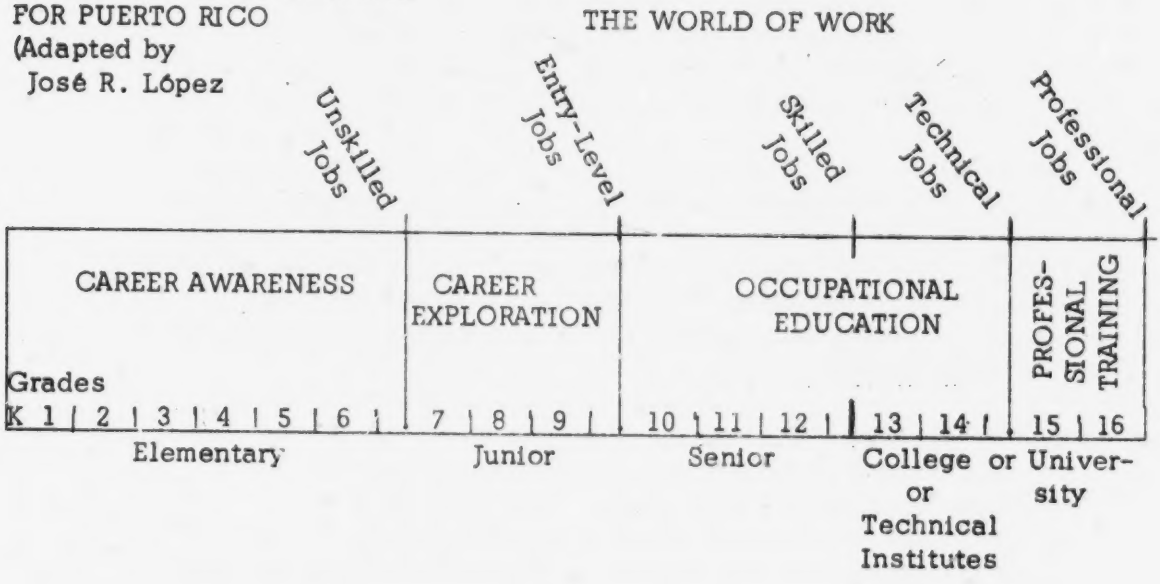

Table IV

The Director of Vocational and Technical Education in Puerto Rico, and her staff, have been also concerned with the topic. They have said that "the vital problem today in Puerto Rico is the harminizing of personal achievement with the needs of a society many times larger and more intrincate than that of early days. A major goal of public education in Puerto Rico is to develop economic as well as occupational competency in the students".

To deal with these concerns, the Guidance Program and the Research Unit of the Vocational and Technical Education Program, have been developing for the last years, seven projects on Career Education. They aim to lead the youngsters to explore into the world of work, and discover productive means of earning their living according to their needs and interests. These projects are known as :

1. Sequential Approach to Career Orientation and Preparation — Carolina School District
2. Course in Introduction to Occupations — Semester Course for secondary school students.
3. Career Education Program-Humacao School District
4. Innovations to Prepare Disadvantaged Children for the World of Work — San Sebastián School District
5. Career Development Program at the Elementary School — San Juan (E) School District
6. Acquaint Elementary and Junior High School Students with Career Possibilities - Lajas School District
7. Dissemination of Occupational Information to Junior and Senior High School Students - Films production

As the titles imply, each one of these projects have different objectives, procedures and outcomes. Each one is considered a pilot project to find different ways to deal with Career Education, and is directed to different target population. Some of the projects are strictly vocational; others combine the Vocational and the academic. Following is a description of the objectives and procedures in each project.

a. The Sequential Approach Project has been designed to provide students with a series of vocational education experiences which will enable them to adapt to the challenge of the world where a technological revolution is taking place. The project is directed toward expanding the students self-awareness to an occupational structure, starting at the elementary level, in an area of rapid industrial development - Carolina School District.

b. In the elementary level, the participants are fifth and sixth graders who are exposed to an intensive occupational orientation, through: audiovisual aids, conventional classes, visits to business and industry, conferences by community resource people and observation at the area vocational school.

In the junior high school level, the Ohio State University Program "The World of Construction" is used, adapted and translated into Spanish. Eighth graders in two Rural Junior High Schools and all students in two Urban Junior High Schools are participating. A curriculum guide for occupational exploration was developed implementing the cluster approach.

In the senior high school level there is an overall emphasis on testing, counseling and guidance. A placement team assists students to get full or part-time jobs. A "crash" program is included for students who have not acquired entry level skills.

A Mass Media Center has been organized as a resource for teachers, counselors, students, administrators, parents, and industry. Consultants have been used for curriculum designs and techniques. Occupational information on the microfilm system is being prepared to be used with secondary school students. Occupational brochures, curriculum guides, audiovisual aids are prepared for the operation of the project.

b. The course Introduction to Occupations has been designed with the purpose of providing secondary school students with information, in a systematic way, on occupational and educational opportunities in Puerto Rico. It is a three phase project. Students are introduced to a broad scope of occupations, with the intention of orienting them for career decision.

This approach is a new idea to answer the young people questions of "Who am I, Where am I going, How attainable are my plans and goals, What can I do to reach them, How all these fit into the world of work?" Guidance is reinforced. Teachers of the academic regular programs are trained to deal with it. Test methods and materials develop effective relations between occupational and academic courses.

The course is taught in different school districts(12). Last year it reached to 3,305 students in the secondary level. This new approach has been already discussed in meeting with School Superintendents and directors of secondary schools.

c. The Humacao Career Education Program consists of four components: Elementary School, Junior High School, Guidance and Counseling, and Placement. It is designed to increase awareness of students in terms of the broad range of options open to them in the World of Work. A placement service insures the placement of all exiting students into either a job, a post-secondary occupational program, or a baccalaureate degree.

Eight elementary schools and six junior high schools (Rural and Urban) in the Humacao School District are starting to participate in the project. Twelve counselors will be employed to serve the schools. Counselors will receive a special training, with the assistance of consultants, and will be expected to carry on an articulated program from K to 12. Guidance criteria will be defined in terms of students behavior, and the procedures will be based on the system concepts in education. A placement officer in the senior high school will coordinate his efforts with the Employment Security Service, the Vocational teachers, the guidance counselors and the cooperative education coordinators.

d. Innovations to Prepare Disadvantaged Children for the World of Work, has the purpose of finding new and better ways of helping disadvantaged and handicapped students to discover and develop their own potentials to have a place in the economic development of Puerto Rico. The project is established in the San Sebastian School District. It comprises the three school levels but relies heavily upon the participation of the community. The innovative feature of the project is the "team approach" of vocational, academic and adult education. The educational experiences are intended to give students (disadvantaged and handicapped) a sense of self-fulfillment and competence for entering the World of Work. This Project is funded by E.S.E.A. Title III.

The instructional offerings, both academic and vocational, are based on students special needs and characteristics. Students are placed in regular and special academic classes according to psychological evaluations. Students are considered almost in an individual basis for vocational training. Handicapped students are provided with intensive guidance and

counseling services. Seminars on family living enlist the parents to supplement the school efforts. A placement team includes representatives from labor and industry. Courses in Agriculture are included in the exploratory cluster of occupations.

e. Acquaint Elementary and Junior High School Students with Career Possibilities, is established in a Rural Second Unit (K-9) at Barrio Palmarejo in Lajas School District. It is designed to acquaint the rural population with the occupational world. Enrichment of the actual offerings, academic and pre-vocational activities and content of the World of Work will be added.

Beginning at the fourth grade, the students are exposed to various occupations available, together with field trips, group discussions, skills needed, personal characteristics, attitudes, working experiences, etc. At the junior high school level, these experiences are intensified, focusing on agri-business, service occupations, and the like. Students explore deeply into occupational clusters, such as horticulture, machine operation, craftmanship, sewing, convalescent care, and positions related to clerks, receptionists, etc. Ninth graders select one or more occupations and learn the skills to work in such trade. A total of 686 students have participated in the project, both boys and girls.

f. Career Development Program at the Elementary School, is a special project in the San Juan (East) School District. It is intended to portray a broad view of the many different occupations to students who live in an area that is aware of vocational education as a natural component of the total educational process. It will provide the students with the necessary criteria to select their own field of work for the future, and will expand their vision into the World of Work to understand the importance of their role in it.

The program provides for three developmental phases: (1) Work exposure and self-awareness, (2) career and aspirational awareness, and (3) experimentation and role finding. Students experience different alternatives that encourage them to explore, inquire, and make decisions. Emphasis is placed in the relationship of skills, attitudes,

characteristics, academic preparation and vocational training. A total of 1,056 students from grades one to six, and ranging from 6 to 15 years old, are participating. Another school will be used for control purposes.

g. Dissemination of Occupational Information. This project, closely related to Career Education from the standpoint of occupational exposure, is designed to prepare movie films and other visual aids to provide students with a general view of the occupational world. These films will supplement trips to factories and observation of vocational shops. They will also show the relationship between occupational opportunities based on courses in biology, chemistry, physics, language arts, social sciences, mathematics, etc. They will provide materials to teachers and counselors to motivate students for career planning, and to understand the changing nature of industry, occupations and vocational training.

A detailed follow-up evaluation has been made of some of these pilot projects. These evaluations, made in the process of development of the projects, have served to re-orient the approach, determine and correct the pitfalls, and develop a sense of security in the personnel and the students. The highlights of the evaluation made follows :

1. The Evaluation Report of the Sequential Approach in the Carolina School District, states that :

> The community, school personnel and industries were receptive and accepted with enthusiasm the innovative program.
>
> The World of Work Program for the elementary school has been developed with great impact on education as a whole.
>
> More attention has been given to twelve graders in planning for their occupational future.
>
> Other school districts have expressed their interest in incorporating some of the components of this project into their regular school curriculum.

2. The Evaluation Report of Innovations for Disadvantaged Children in the San Sebastián School District, states that :

Progress was observed in over 75% of the disadvantaged students in Agricultural Mechanics.

Reading ability was achieved in the elementary school students.

Employers were satisfied with the participation in work experiences of the junior and senior high school students.

A change of attitude was observed in potential dropouts.

Progress in command of English was observed through the administration of tests

Teachers prepared and used materials in collaboration with the Media Center

Parents participated satisfactorily in the guidance sessions.

3. The Evaluation Report of the Rural School Population Project in the Lajas School District mentions the following :

The collection of data was useful for the continuous evaluations made by an Advisory Committee.

The participation of elementary school students in the World of Work orientation activities was satisfactory.

Teachers made tests to measure achievement and changes in attitude.

4. The Evaluation Report of the Career Development Project in the San Juan (E) School District, states that :

Several measuring instruments were developed and utilized for evaluating the objectives of the project.

Comparative results, using control and experimental groups, will be studied to show the effectiveness of the correlated career education curriculum.

5. The Evaluation Report of the Course in Introduction to Occupations, states that :

A total of 3,305 secondary school students have been reached by the Course.

The responses to a questionnaire answered by the students was very satisfactory in relation to the usefulness of the course.

School and industry relations were strengthened.

6. The Evaluation Report of the Dissemination Project, states that :

Six films were prepared about the changing nature of occupations, motivating young people for career planning etc.

Counselors, teachers and school principals received training in the use of the films for orientation purposes.

A total of 3,099 students participated in meetings using the films and answered a questionnaire for evaluating the content of the films.

Copies of each film have been placed in each of the six regional offices for use by the school districts.

7. No evaluation has been made yet of the Career Education Project which is being developed in the Humacao School District.

Recommendations

Concerning the Career Education Program, the Advisory Council recommends the VTE Administration, to:

a. Secure consultative services for an appraisal of the projects in Career Education, so that definite approaches might be selected to deal with the problem in Puerto Rico. These services may include industry people to determine the effectiveness of the projects; and

b. In the meantime, take some steps to face actual conditions, such as to provide broader attention to the elementary level students in the Career Education projects, and expand the Course on Introduction to Occupations to all school districts.

DATA BANK OR INFORMATION SYSTEM

In a report made to the Advisory Council by the Director of Vocational and Technical Education, Dr. María S. Lacot, she says:

"Due to the rapid social and techological changes in Puerto Rico, the State Department of Education, and in particular the Vocational and Technical Programs, are in need of rapid means of obtaining valuable information to meet the demand of trained personnel for industry, commerce and services. The information is particularly important to Vocational Education where enrollment has duplicated in the last years.

' The collection of data and the analysis of information is more complex. These tasks are boresome to the personnel and in many cases incomplete, when it is done by hand. When each program gathers its data individually, it duplicates efforts and brings inaccuracy. All these affects sound planning and decreases the effectiveness of the programs."

At present, the Vocational and Technical Program is having difficulties in compiling the following information, Dr. Lacot said :

"a. There is no uniformity or accuracy in the data collected in relation to schools, shops, enrollment, teachers.
b. No criteria has been established to prevent the duplication of enrollment. For example, in projects where more than one program participate, each one compiles its own enrollment. Even a group may be classified, both as "adult" and "post-secondary".
c. There is urgent need to update the data. In many cases, while the information is received from the center, a course has been finished, or a new enrollment added.
d. There are no uniform practices, instruments, nor records or forms, to obtain the information.
e. The directors of the programs, in some cases have not the entire view of the information needed, and some data may be missing.
f. Other agencies, which in many cases are used as source of information - Department of Labor, Planning Board, etc. - use a different codification or compile the information in a way not useful to the Vocational and Technical Programs."

The report offers a list of statistical data and information which are needed for the preparation of the State Plan, for the Final Annual Report, for periodic reports to CAMPS, for reports to U.S.O.E., to the Office of Personnel of Puerto Rico, and for many other purposes. Forms OE 3136, OE 3138, OE 3139, PR 3129, PR 3131, PR 3132, PR 3133 and many others require up-to-date, accurate and reliable information in a short time. Students have to be identified by instructional levels, occupational areas, target population, as well as by schools, regions and courses. "Making all this classification by hand, takes a long time and in most cases is not very reliable", she says.

The Advisory Council was very concerned with this situation. The Council also became aware that the VTE Programs were very conscious of those conditions and that they were already looking for solutions. The problem was discussed frankly and a plan of work was suggested. Meetings were made to hear the advice of specialists. The Director of CEDE (Electronic Center of Statistical Data) from the Department of Education was consulted, other specialists from the States were contacted and the reports on Data Collection and Data Bank from the U.S.O.E. were studied.

To deal with the problem, the Vocational and Technical Program started a joint venture with the Planning and Development Program of the Department of Education. Four files were to be prepared (Students, Facilities, Personnel and Finance), combining the information collected for the whole School System, with the information required for the Vocational Programs.

The shortcomings of this proposed system are (1) that it requires a long time for the development of the modules, and (2) the data, after collected, have to be processed, analyzed, and translated into such form as to be of value for the planning and evaluation purposes of the VTE Programs.

Thus, the VTE Director decided to make use of the services of the Center for Vocational and Technical Education, in Ohio State University, to implement an Information System. The Electronic Center of Statistical Data of the Department of Education is to provide the computer service. The Ohio Center staff has experience in the designing and installation of Information Systems for Vocational Programs with the specific approach of using the data for planning and evaluation, and with the corresponding codification as required by the U.S. Office of Education. The Advisory Council may contribute to the expense of this project.

The installation components, including costs, personnel, procedures, and data formats have been determined. The system will provide for (1) an enrollment inventory by schools, regions, levels, and programs, (2) a program characteristic or status report, (3) a community-school characteristics inventory, and (4) a follow-up student information card. The system will provide also for continuous updating of information, and for a reduction of duplication. Collected data will be machine processed, and computer print-out tables will be generated to provide summary data to the administrators.

Recommendations

The Advisory Council, in relation to the collection of data for planning and evaluation purposes, recommends the VTE Administration to:

a. Accelerate the implementation of the VTE Information System, in such a way that the VTE Programs may have the basic information available for FY 1973-74 planning and evaluation;

b. Verify and update the information collected by this System, periodically, thereafter.

RESEARCH STUDIES MADE DURING FY 1971-72

The Research and Curriculum Development Unit of Vocational and Technical Education conducted several research studies and produced curriculum materials that were very useful for promoting, coordinating and developing the VTE programs and projects. The Research and Curriculum Unit is a complex designed to promote the development of VTE projects, to disseminate information, to coordinate the production of educational material, and to plan and evaluate the programs. It has four components : Curriculum Development, Planning and Evaluation, Information and Dissemination, and Research. The Unit provides service to all vocational programs at all levels (central, regional, district, school, classroom), and disseminates information to graduate students, public and private agencies, both national and local.

During the year 1971-72, the Unit offered the following services :

Curriculum Development

1. Studied and interpreted the priorities and the curriculum necessities of the vocational programs.

2. Coordinated with the Pedagogical Resources Center the curriculum production of the San Juan, Mayaguez, and Humacao subcenters.

3. Coordinated with the Information Component the curriculum dissemination and implementation.

4. Implemented and coordinated the curriculum specially designed for the pilots, exemplary, demonstrative, and Title I projects.

5. Coordinated the implementation of the Career Education concept in the curriculum of vocational and technical education programs.

Planning and Evaluation Component

1. Studied and interpreted the patterns or guides necessary to produce the State Plan for the Vocational and Technical Education Program.

2. Compiled statistics from vocational and technical education programs.

3. Developed strategies to gather, organize and analyze the necessary information for the development of the State Plan.

4. Interpreted data and other information related to the State Plan and made recommendations.

5. Identified and weighed different alternatives to fulfill the objectives of the State Plan.

6. Designed the methodology and the statistic treatment for the development of projects.

7. Coordinated the organization and preparation of evaluative material for dissemination.

8. Interpreted and submitted the implications and conclusions of completed projects.

Information and Dissemination Component

1. Compiled, studied, classified, referred, filed, and retained documents related to the Vocational and Technical Education.

2. Studied and analyzed the information, materials and documents pertaining to the vocational programs.

3. Provided technical help in the preparation of information materials for dissemination.

4. Determined the reproduction system and the dissemination methods to be used.

Educational Research Component

1. Gathered information about the problems under study.

2. Prepared proposals drafts following the corresponding guides, and prepared them in their final form.

3. Coordinated the implementation of research projects.

4. Implemented the graduates follow-up study.

5. Prepared reports on completed projects.

6. Coordinated with the Information and Dissemination Component the dissemination of proposals and reports of projects.

The Research and Curriculum Development Unit has conducted, up to the present, the following Research Studies and Curriculum Projects :

I Research Studies

R-72-01 Follow-up of Graduates of Vocational and Technical Education Courses, 1970-71

R-72-02 Job Placement and Follow-up Study of Graduates of Occupational Education Courses in Home Economics in Puerto Rico (1964-68)

R-72-03 Follow-up of Graduates from a Televised Course on Refrigeration for Automobiles

R-72-04 Business Vocabulary Count in the Spanish Language

R-72-05 Study to Determine the Curriculum Content of Eight Trades and Industry Occupations

R-72-06 Consumption Patterns of Puerto Rican Families

R-72-07 Professional and Technical Competencies Needed in the Preservice Vocational Agriculture Curriculum in Puerto Rico

R-72-08 Development of an Information System

R-73-01 Follow-up Study of Graduates of Vocational and Technical Education Courses, 1971-72

R-73-02 Expansion of Job Placement and Follow-up Study of Graduates of Occupational Education Courses in Home Economics in Puerto Rico from 1969-70 to 1970-71

P-72-02 The Use of Machine Shorthand in the Training of Highly Skilled Stenographers

P-72-03 Expansion of Vocational Education Offerings to the Academic Senior High Schools for the Occupational Training of Students

P-72-04 Afternoon courses for disadvantaged youth and adults from 16 to 21 years old in the Commercial Education, Distributive Education and Vocational Industrial Education

P-73-01 Vocational Occupational Training in Private Schools for Disadvantaged Students and Out of school youth in Puerto Rico

IV Career Education Projects

CE-72-01 Carolina School District Sequential Approach to Career Orientation and Preparation

CE-72-02 Innovations to Prepare Disadvantaged Children for the World of Work - Career Education Project at San Sebastián

CE-72-03 Model Program for an Integrated Curriculum at Rodríguez Cabrero Elementary School

CE-72-04 Research and Development Project in Career Education in Humacao

V Exemplary Projects

E-73-01 The Training of Disadvantaged Youngsters on Methods and Techniques of Modern Agriculture for the Production, Collection, Classification, Packing, and Cooperative Marketing of Vegetables and Minor Crops

E-73-02 A Model State Pedagogical Resources Center for Designing, Producing, Testing, Revising, and Disseminating Teaching Audiovisual and Other Educational Materials for Students of Regular, Special and Post-secondary Programs for Vocational and Technical Education in Puerto Rico

E-73-03 Enrichment of the Office Practice Course at the Post-secondary Level and Organization of a Model Office

E-73-04 Career Education Program at Palmarejo Rural Second Unit in Lajas School District to Acquaint Elementary And Junior High School Students with Career Possibilities

Up to the present, the Research and Curriculum Development Unit has distributed the following curriculum material :

Distributive Education

Teaching Guides :

Cashiers
Baggers
Mid-management for Delicatessens
Basic Accounting Principles
Tourist Guides
Salesmen for Retail, Wholesale or Service Business
Learning packages for the students
Window Display

Home Economics

Teaching Guides :

Seamstress
Specialist in Food Preparation for Special Occasions
Assistant Interior Decorator
Florist
Assistant in Food Preparation and Service

Business Education

Teaching Guides :

Fundamentals of Business-Teacher's Guides
Transportation
Communication Services
Principles of Economy
Business Law

Business Mathematics
Insurance
Banking Services
Principles of Management
Economy
Office Simulation

Industrial Arts

The World of Manufacturing (translation, adaptation and implementation). Includes Teacher's Guide, Laboratory Manual, and a Student Text Book.

Trades and Industrial Education

Learning packages for the students

Electricity
Principles in Technical Drawing
Principles of Technological Education
Cosmetology
Construction and Furniture Design
Automobile Mechanic
Barbering

Teaching Guides :

Power Sewing Machine Operation
Preparation for the World of Work
Personality and Human Relations
How to Apply for a Job
Labor Relations Laws in Puerto Rico
Safety
Work Simplification

Guidance

Monographs :

Construction Carpenter
Stenotype
Automobile Mechanic
Accounting Machines Operator
Diesel Mechanic
Business Office Machines Mechanic
Agriculture Equipment Mechanic

Besides the Data Bank Information Project which will be discussed in detail in a separate chapter, the Research and Curriculum Development Unit also keeps a library which is specialized in vocational and technical education. It covers the areas of evaluation, special education, research, government documents, reference books, dictionaries, local and national level and other material related to vocational and technical education. The entire collection of the ERIC System, together with the printer reader, are available at the library. The Collection includes microfiches, binded documents and collections about professional leadership, new occupations, and research.

Recommendation

The Advisory Council recommends to the VTE Administration the reinforcement of the Research and Curriculum Unit with the necessary professional personnel, and furthermore, that provisions be made in the budget for the accomplishment of its operation.

FOSTERING TEACHERS' PREPARATION

During the current year, 1971- 72, the VTE Program organized a Unit for the Professional Development of VTE Personnel. It is mainly a coordinating unit between several VTE Programs and Institutions of Higher Learning in Puerto Rico and abroad. Its purpose is to purvey in-service training as well as facilitate the preparation of future teachers. The Unit makes use of federal funds and state funds for scholarships, seminars, and other in-service training activities.

A total of 37 teachers were given scholarships (year leave with full pay) to make graduate work during the year 1971 - 72. Three of them studied in the United States and the others in Puerto Rico. Two of those studying in the States had a federal grant. They are working toward the Doctorate Degree in Commercial Education, Distributive Education and Home Economics. The scholarships granted to study in Puerto Rico were listed as follows :

Counseling and Guidance	14
Industrial Arts	6
Home Economics	6
General Supervision	6
Health Education	2
	34

A total of 512 teachers were paid the tuition fees to study part-time in Puerto Rico: 222 for Master's Degree and 290 for B.A. They were distributed as follows :

	Master	B.A.	Total
Vocational Industrial	45	96	141
Office Education	72	50	122
Industrial Arts	39	56	95
Distributive Education	11	31	44
Agriculture	0	41	41
Counseling and Guidance	31	0	31
Home Economics	22	0	22
General Supervision	1	10	11
Technical Education	1	4	5
Health Education	0	2	2
	222	290	512

Seven teachers spent the summer session getting acquainted with industrial developments. Thirty-six teachers and supervisors attended meetings and seminars in the United States, including visits to schools, plants and farms. Almost all teachers attended meetings and seminars in Puerto Rico for in-service training.

Among the seminars and meetings conducted for in-service training, the following deserve special mentioning :

a. Two Seminars on Career Education, in coordination with New York University
b. A Seminar on Curriculum Development, sponsored by the U.S.O.E. and AMIDS (Area Manpower Institute for Development of Staff).
c. A Seminar on Graduate Studies, in coordination with the State College of San José, California
d. In-Service Training for Office Education personnel sponsored by the Puerto Rico Office of Personnel
e. In-Service Training for Vocational Industrial instructors in cooperation with Ford Motor Company and Dynamic Enterprises.
f. In-Service training for Vocational Counselors, sponsored by the College Entrance Examination Board.
g. Seminar on Drug Addiction, sponsored by several government agencies.

Many other meetings and workshops were conducted by different programs : Home Economics, Technical Education, Agriculture, Health, etc. to foster the professional growth and proficiency of their personnel. Eight new teachers received training in Agriculture in the Mayaguez Campus of the University of Puerto Rico (Agriculture and Mechanics Arts), and thirty other teachers received training in Technical Education in the InterAmerican University in coordination with the Technical Institutes.

Recommendation

The Advisory Council strongly recommends that provisions be made with industry to have more VTE instructors and counselors attend summer sessions working in industry, as a definite way to acquaint themselves with the latest processes and working conditions of the new technology, and with the impact of industry for career awareness in students.

ANALYSIS OF CENSUSES OF MANUFACTURES

Puerto Rico has been growing fast in manufacturing and industry in the last years. This expansion is having great impact in occupational training. In the Guidelines set forth for the Evaluation Report (1972), the Advisory Council was concerned with the extent to which the employers needs and the manpower development were met.

The Department of Labor of Puerto Rico issued a Census of Manufactures, which shows the industry grouping, according to the Standard Classification Manual of the U.S. Bureau of the Budget, the employment of sexes and operations, and the nominal earnings.

The Advisory Council's staff made a broad examination of Table VI shown in Page 57 of the Highlights of the Censuses of Manufactures in Puerto Rico, as of October, 1971, was made. The Table comprises both the plants promoted by the Industrial Development Administration (2,158) as well as factories promoted elsewhere, for a total of 2,745 manufacturing industries. It does not include non-manufacturing enterprises.

The Table shows that there are nearly 100 more plants for the production of non-durable goods (1421) than for durable goods (1324). Most non-durable goods plants are engaged in the production of food products (441) and clothing apparels (437). Most durable goods plants are engaged in furniture and fixtures (348) and metal products (375). A high number is engaged also in stone and glass products (250).

Out of a total employment of 138, 126, nearly 83% (114,714) are employed as production workers. The other 17% are for maintenance purposes. Also, 47% (15,704) of the total employees are women, when only 53% (72,422) are men. If the 23,412 (17%) workers employed for maintenance purposes are deducted, then only 49,010 (36%) men are employed as production workers.

Most of the women are employed in the non-durable goods factories (50,731) as against 14,973 (20%) in durable goods factories. The clothing apparel plants employ 48% (31,527) of the whole female labor force, followed by electrical machinery (7,075), leather products (4,730), professional instruments (4287), and food products (4,035) plants. Very few women are employed in stone and glass products (598), furniture fixtures (411), metal products (454), paper products (598) and transportation equipment (196) plants.

The number of male production workers employed in nondurable goods is slightly higher (28,242) than in durable goods plants (20,768) for a difference of only 4%. The food products plants lead the employment of men with 10,460, followed by stone and glass products (5,530), and metal products (4,419) plants.

Textile factories employ nearly as many women and men as production workers. Women lead men as production workers in such plants as : apparel products, tobacco products, leather products, electrical equipment, professional instruments, and miscellaneous products plants. Men lead women as production workers in such plants as : paper products, chemical products, plastic products, lumber products, stone products, metal products, and transportation equipment plants.

Durable goods industries pay higher salaries ($2.05), in general, than non-durable goods ($1.91), per hour. Some industries, such as transportation equipment ($2.52), chemical products ($2.36), plastic products ($2.36), and paper products ($2.32), pay the highest salaries. Tobacco manufactures ($1.56), leather products ($1.59), clothing apparels ($1.70), textile products ($1.73) and furniture fixtures ($1.73) pay the lowest salaries. In general, manufactures employing a large number of women pay lower salaries than those employing more men.

Thus, in planning for VTE programs, the following conclusions should be considered :

1. The labor force in production workers is nearly equal for men and women - 53% and 47%.

2. Only 17% of the total employment are employed for maintenance purposes - electricity, plumbing, mechanics, etc.

3. Except in clothing apparel plants which have a women force of 90%, the other manufactures employ indistinctly men or women in almost equal proportion.

4. Therefore, except for maintenance purposes where men lead and in clothing apparel plantes where women lead, VTE training should be evenly distributed between men and women, to meet the needs of the manufactures.

HIGHLIGHTS OF THE CENSUSES OF MANUFACTURES

PUERTO RICO — October, 1971

INDUSTRY GROUP	NUMBER OF ESTABLISHMENTS 1971	TOTAL EMPLOYMENT 1971	WOMEN EMPLOYED 1971	PRODUCTION WORKERS 1971	MAINTENANCE WORKERS 1971	Average Hourly Earnings (Nominal) 1971
ALL MANUFACTURING INDUSTRIES	2,745	138,126	65,704	114,714	23,412	$ 1.91
Nondurable Goods	1,421	94,855	50,731	78,973	15,882	1.84
Food & kindred products	441	21,746	4,035	14,495	7,251	1.94
Tobacco manufactures	45	5,565	3,053	5,360	205	1.56
Textile mill products	79	6,752	3,535	6,194	558	1.73
Apparel and related products	437	36,218	31,527	34,315	1,903	1.70
Paper & allied products; printing, publishing and allied industries	158	4,074	598	2,610	1,464	2.31
Chemicals & allied products	119	6,924	1,578	4,766	2,158	2.36
Petroleum refining & related industries; rubber & miscellaneous plastic products	78	7,005	1,675	5,072	1,933	2.36
Leather and leather products	64	6,571	4,730	6,161	410	1.59
Durable goods	1,324	43,271	14,973	35,741	7,530	2.05
Lumber & wood products; furniture and fixtures	348	5,035	411	3,882	1,153	1.73
Stone, clay & glass products	250	7,280	526	5,556	1,724	2.26
Metal products	375	6,322	454	4,873	1,449	2.17
Machinery, except electrical; and transportation equipment	63	2,040	156	1,572	468	2.52
Electrical machinery, equipment and supplies	119	12,557	7,075	10,882	1,675	2.00
Professional & scientific instruments and allied products	42	6,312	4,287	5,644	668	2.06
Miscellaneous manufacturing industries	127	3,725	2,064	3,332	393	1.78

Source : Puerto Rico Department of Labor - Bureau of Labor Statistics (adapted)

Establishments classified according to Standard Classification Manual of U.S. Bureau of Budget

MANPOWER TRAINING NEEDS

The Advisory Council is alert to all information available on manpower needs and projections for Puerto Rico, with the purpose of determining how the employment training needs are met by the VTE Programs. If one of the goals of Vocational Education is to supply the demands of the labor market, a primary step in the evaluation process of vocational programs is to be well informed of the supply and demand of jobs in the occupational areas. Any indicators that would satisfy this factor, will help in the general assessment of the vocational programs.

The Director of the Bureau of Employment Security of the Department of Labor of Puerto Rico, Mr. Manuel Rivera, submitted in May 14, 1971, a report to the Regional Manpower Administrator, Mr. Clayton J. Cottrell, in relation to "Projections on Manpower Training Needs for Puerto Rico for 1972". The Report is based on information collected from the local offices of the Department of Labor throughout the Island, and on data received from different governmental agencies: Planning Board, Industrial Development Administration, Tourism Department and the Highway Authority.

An analysis of the Report points out :

a. "The substantial growth registered in the economy of Puerto Rico during the past two decades points to a continuation of the significant changes of the structural base of various industrial sectors. Manufacturing will continue to be the prime mover of our economy. The chemical and allied products, metal products and machinery, and petroleum and other miscellaneous products are expected to be the principal contributing groups. It is expected that these three groups will generate almost a half of the manufacturing net income. Because they are highly productive industries they will need higher skilled workers to fill job openings.

b. ' The service industries will also be growing fast in the years ahead. Within this industrial core, business services and hotels will be the two largest growing groups. Business services will grow as employers in advertising,

accounting, auditing, bookeeping and computing services, and collecting agencies increase their services. Employees needed in these groups will come in its majority from the public and private universities of Puerto Rico. The hotel industry is expected to need by 1972 a total of 330 new employees. All these employees will be trained in a hotel school recently established in the island.

c. 'Construction activity is expected to keep on expanding along with the general growth of the economy. In this industry, with the exception of engineers, the other workers should be trained to meet the anticipated employment needs.

d. 'The trade sector is expected to minimize cost and maximize efficiency, thus increasing some of the old occupations like butchers and sales people. The occupations needed by 1972 in this industry should be made available in our labor market.

e. 'Finance, Insurance and Real Estate are expected to grow at a much lower rate than in the past 5 years. All new jobs to be created in this industry will also be available in our labor market. Most of them should be provided by our school system.

f. 'Shortages in Government will probably increase because of the relatively low wages paid as compared with the private sector. A tipical case is that of the Highway Authority. This agency will need more than 100 new engineers for 1972, but chances to get all of them is improbable because the private construction activity is hiring all new engineers graduated from the Agricultural and Mechanic Arts College.

g. 'There are many other occupations that are expected to have heavy demand like : stenographers, secretaries, clerks, electricians, mechanics, plumbers, masons, nurses, and many others, specially professionals. In view of that, the Commonwealth Government should plan to construct more vocational education facilities throughout the Island."

The Report comes to the following conclusions :

1. Around 19,000 new jobs will be needed by 1972.

2. Nearly 9,200 will need special training, most of them, 7,000, to be trained in the vocational schools or on-the-job-training. Around 2,000 new jobs, most of them professionals and high skill workers, will be very difficult to fill.

3. In separating those occupations by principal industry groups, some industries, like Finance, Insurance and Real Estate, will fill the new jobs by graduates from High School and by College drop-outs. Most of the new jobs that the manufacturing industries will create might be filled by graduates from vocational and technical courses.

The Report presents detailed information on the manpower needs by industry group and occupational titles, by total number of workers needed, supply of work, and training needs, and by training facilities available in Puerto Rico at present. In some cases, no training facilities are available, which would create, either the importation of workers (skilled and professional) or the shortcoming of the industrial growth. These limitations should be of special concern.

Table No. VII, next page, is a summary of the information made available in the Report. It shows the nine industrial groups established by the Standard Classification Manual of the U.S. Department of Labor, and a breakdown of the occupational clusters in the manufacturing industry.

Recommendation

The Advisory Council, in relation to indicators that may show how the VTE Programs are meeting the needs of the students and of manpower, recommends the VTE Administration to :

a. Consider the conclusions reached at in the analysis of Manpower Needs and Census of Manufactures Reports made by the Department of Labor, in planning for next year vocational offerings and services;

b. The Advisory Council reiterates the recommendation made last year, in the sense that students may have at least a semester work experience in industry. This year, specific emphasis is placed on fostering still more the cooperative programs with industry for the training of production workers.

PROJECTION OF MANPOWER NEEDS FOR 1972 IN PUERTO RICO

Industrial group	Workers Needed	Work Supply	Training Needs
Agriculture	20	20	0
Construction	4,243	2,159	1,094
Manufacturing	8,047	5,567	2,930
Furniture Fixtures	(1,534)	(534)	(1,000)
Glass Products	(142)	(16)	(126)
Metal Products	(91)	(91)	(00)
Electrical Machinery	(680)	(270)	(410)
Machinery (other)	(205)	(40)	(165)
Scientific Instruments	(218)	(74)	(144)
Food and Kindred	(6,513)	(4,583)	(1,930)
Apparel	(3,304)	(2,396)	(918)
Printing & Publishing	(113)	(80)	(33)
Chemicals	(1,556)	(465)	(1,091)
Petroleum	(225)	(20)	(205)
Miscellaneous	(493)	(149)	(344)
Transportation	75	30	45
Trade	138	82	56
Finance, Insurance, etc.	1,363	0	1,363
Services	1,111	400	711
Government	1,870	674	1,196
Unclassified	1,886	38	1,848
Totals	18,753	9,510	9,243

Summary by industrial group of Report by Bureau Employment Security.

Table VII

FOLLOW-UP OF VOCATIONAL SCHOOL GRADUATES

One of the indicators used by the Advisory Council to determine how the vocational programs are meeting the students' needs is by analyzing the results of follow-up studies of Vocational School graduates. These studies offer valuable information in relation to the occupational status of the students completing training in the different vocational areas, and serve as an index of the occupational demand and acceptance of the graduates by industry. They also hint on the economic effectiveness of training to different target population and instructional levels.

During the current year, the Research Unit of the Vocational and Technical Education Program made a Study concerning the graduates of 1970-71. They were contacted six months after finishing training. The response was not as satisfactory as expected. In the secondary level the response in all areas was 44%, in the post-secondary level it was 20% and in the adult level it was almost insignificant (8%). The Research Unit is trying to determine the causes for this low response, as compared to a similar Study made during the year 1968-69 when the response was 69%.

With these limitations, the Advisory Council analyzed the information obtained. The results may be summarized as follows :

1. In the Secondary Level, out of 8,702 graduates in 1970-71, only 15% were employed in the occupation for which they were trained, 24% were working in a related occupation, and 51% were still looking for a job six months after finishing their training.

   It is significant to point out that all occupational training programs had around 30% of employment, with the exception of Occupational Home Economics where employment was very los (7%). Employment in Agricultural work was nothing. (0%).

   Detailed information by occupational programs is offered in Table VIII, page 67.

2. In the Post-secondary Level, out of 11,650 graduates in 1970-71, an average of 42% were employed in the occupation for which they were trained, 18% were working in a related occupation, and 40% were still looking for a job six months after having finished their training.

   It is significant to point out that employment for technical courses graduates was the highest (77%), followed by Health Occupations (68%). Occupational Home Economics had the lowest employment rate (4%). Again, employment in Agricultural work was very low (23%). Graduates from Occupational Home Economics working in related occupations had the highest (36%).

   Detailed information by occupational programs is offered in Table IX, page 68.

3. In the Adult Level, out of 4,720 graduates, no reliable information was obtained.

   Detailed information is offered in Table X, page 69.

Recommendation

The Advisory Council recommends to the VTE Administration, in relation to the results of the follow-up study of graduates made during the current year, the following :

a. A working procedure be designed to obtain a high response and more reliable information from the graduates;

b. Studies be made to determine the causes for low employment rates of graduates from the Occupational Home Economics and the Agricultural Programs.

FOLLOW-UP OF GRADUATES BY OCCUPATIONAL PROGRAMS

A - Secondary Level 1970 - 71

Programs	Business	Marketing	H. Economics (Occupational)	Health	Trades and Industry	Technical	Agriculture	Total
Number of graduates	3,655	542	1,143	169	2,511		672	8,702
Number of responses	1,766	302	538	44	1,155		276	4,081
Available for work	1,266	261	335	30	933		95	2,920
Not available for work (Several reasons)	500	41	203	14	222	Graduated	181	1,161
Working in Occupation for which trained	292 24%	77 30%	23 7%	11 37%	324 35%		0 0%	727 25%
Working in Related Occupation	286 23%	84 32%	93 28%	7 23%	236 25%	Students	7 7%	713 24%
Looking for a job	688 53%	100 38%	219 65%	12 40%	373 40%	No	88 93%	1,480 51%

Table VIII

FOLLOW-UP OF GRADUATES BY OCCUPATIONAL PROGRAMS

B - Post-Secondary Level 1970 - 71

Programs	Business	Marketing	H.Economics (Occupational)	Health	Trades and Industry	Technical	Agriculture	Total
Number of graduates	1,491	993	285	583	7,522	321	455	11,650
Number of responses	132	95	72	135	278	166	87	965
Available for work	121	87	50	129	244	153	61	865
Not available for work (several reasons)	11	8	22	6	34	13	26	100
Working in Occupation for which trained	34	17	2	88	91	118	14	364
	28%	20%	4%	68%	37%	77%	23%	42%
Working in Related Occupation	17	28	18	7	63	13	13	159
	14%	32%	36%	6%	26%	9%	21%	18%
Looking for a job	70	42	30	34	90	22	34	322
	58%	48%	60%	26%	37%	14%	56%	40%

Table IX

FOLLOW-UP OF GRADUATES BY OCCUPATIONAL PROGRAMS

C - Adult Level 1970 - 71

Programs	Business	Marketing	H.Economics (Occupational)	Health	Trades and Industry	Technical	Agriculture	Total
Number of graduates	160	575	1,117	294	2,301		273	4,720
Number of responses			239		15			254
Available for work			134		13			147
Not available for work (several reasons)	No Information Available	No Information Available	105	No Information Available	2	No Information Available	No Information Available	107
Working in Occupation for which trained			16 12%		4 31%			20 14%
Working in related Occupation			43 32%		3 23%			46 30%
Looking for a job			75 56%		6 46%			81 55%

Table X

ANALYSIS OF PROGRAMS

PLANNING AND ACHIEVEMENT

To determine the effectiveness of the VTE Programs during the year comprising this Evaluation Report, in terms of development and achievement, the Advisory Council set forth some Guidelines. They asked for an analysis of what the Programs aimed in the Plan for FY 1971-72, and what was accomplished during the year. Objectives and performance were to be accounted with the purpose of determining the progress and the shortcomings of the Programs.

The Plan for FY 1971-72 was analyzed in terms of how the students needs were to be met, according to the goals, objectives and priorities established in the Plan. The services planned were recorded in terms of occupational areas (courses of instruction), instructional levels (secondary, post-secondary and adult), and target population (regular students, disadvantaged, and handicapped persons). The courses of instruction planned by each Program were classified as "continuing" (to be continued from previous year 1970-71), as "expansion of program (added new enrollment or groups), and as "new" courses (to be established for the first time).

Each Program Director was asked to submit an Annual Report of Accomplishments for FY 1971-72. These reports were analyzed following the criteria mentioned above. The information obtained from each Program showing the actual accomplishments during the year was compared to what the Program had planned. Tables were prepared showing the compared data.

These Tables (Tables XI to XXVI), which are shown in pages 75 to 93, are:

Table XI	-	Total Enrollment - By Programs and Levels
Table XII	-	Counseling and Guidance Program
Table XIII	-	Programs Planned and Achieved - Grand Total
Table XIV	-	" " " " - Trades & Industry
Table XV	-	" " " " - Technical Education
Table XVI	-	" " " " - Office Education

Table XVII	- Programs Planned and Achieved	- Distributive Education
Table XVIII	- " " "	- Home Economics (Gainful)
Table XIX	- " " "	- Health Education
Table XX	- " " "	- Agriculture
Table XXI	- Programs by Levels of Instruction	- Secondary
Table XXII	- " " " "	- Post-Secondary
Table XXIII	- " " " "	- Adults
Table XXIV	- Programs by Target Population	- Regular Students
Table XXV	- " " " "	- Disadvantaged Persons
Table XXVI	- " " " "	- Handicapped Persons

Major Findings

An analysis of these Tables points out the following findings:

1. A total enrollment of 188,822 students was reached in all programs under the VTE Administration. The secondary level, that constitutes the regular day classes, attained nearly 70%. The Handicapped Programs were still small, with only 1,860 students. This is only 1% of the total VTE enrollment. The post-secondary and adult levels constituted 8%. Special target services, such as Veterans, Work Incentive, and Manpower Programs represented nearly 4%. Besides, 1,040 students in the elementary level participated in the Career Education projects.

2. The enrollment for the current year in the VTE Programs aiming at occupational training (all levels) surpassed last year by 6,116 students (62,898 students in 1970-71 as compared to 69,014 students in 1971-72). The other Target service programs, aiming at occupational training but under contract, totalled 7,796 students.

3. The number of counselors at all levels was increased to 362, which means 42 professionals over the previous year (320). The proportion remained at 433 students per counselor, which is still far from the goal set of 350 students per counselor. Moreover, nearly 100,000 secondary school students did not receive this service.

4. A total of 692 "new" course-groups were produced or achieved during the FY 1071-72, as compared to 187 which were planned for the same year. The programs establishing the highest number of new courses were Trade and Industry (514), Marketing and Distribution (68), Home Economics (45), and Health Education (43). The programs establishing the lowest number of new courses were Technical Education (6), Office Education (6), and Agriculture (8).

The difference between the number of course-groups planned and achieved was probably due to the impact of the public policy established by the Secretary of Education to offer vocational training in all the high schools of the Island.

5. In terms of educational levels, the three levels - secondary, post-secondary, and adult - were cared for. Attention is called to the rapid expansion of the Programs in the secondary and post-secondary level. This was due to new openings in the Technical Schools, and to the approval of the Associate Degree in Technological Education established by Legislation.

6. Very high attention was given in the VTE Programs to regular students offerings. Moderate attention was given to disadvantaged and handicapped persons, through Special Programs and contracts.

Recommendation

From the analysis of the findings mentioned above, the analysis of the tables supporting these findings, and those pertaining to each of the occupational areas, the Advisory Council strongly recommends:

a. The degree of consistency between what is planned and what is produced or achieved is a sound indication of the quality of planning and the quality of accomplishments. Projections and forecasting of program achievement has to be carefully considered for the allocation of funds to measure costs and benefits. Clearly stated goals, objectives and priorities set forth in the planning process should serve the administration to implement them effectively;

b. A dynamic vocational education program can make a significantly high contribution to Puerto Rico's growth and development, but it has to be on a systematic basis. The implementation of new programs and the expansion and continuation of existing ones should be based on appropriate profiles which satisfy the needs ascertained from an effective evaluation.

ENROLLMENT IN VOCATIONAL AND TECHNICAL PROGRAMS
By Programs and Levels
1971 - 72

Program	Secondary	Post-Secondary	Adults	Handicapped	Other*	Total
Trades and Industry	11,564	8,964	2,370	(274)	-	22,628
Technical Education	-	1,402	297	-	-	1,699
Office Education	15,886	2,762	1,636	(100)	47*	20,331
Distributive Education	2,417	1,325	7,362	(600)	-	11,104
Home Economics (Gainful)	2,076	485	1,652	(92)	-	4,213
Health Education	397	934	526	-	-	1,857
Agriculture	2,700	478	4,150	-	-	7,328
Special Project	465	-	-	(465)	-	465
Subtotal	35,505	15,469	17,993	(1531)	47*	69,014
Veterans Program	-	-	2,310	-	-	2,310
Work Incentive Program	-	-	4,144	-	-	4,144
Manpower Programs	-	-	1,342	-	-	1,342
Subtotal	-	-	7,796	-	-	7,796
Home Economics (General)	52,314	-	12,467	(161)	490*	65,271
Industrial Arts (General)	46,238	-	-	(168)	503*	46,741
Subtotal	98,552	-	12,467	(329)	993*	112,012
TOTAL	134,057	15,469	38,256	(1,860)	1,040*	188,822

* Elementary grades - Special Projects

Table XI

COUNSELING AND GUIDANCE PROGRAM
Number of Counselors and Enrollment Served
1971 - 72

Instructional Levels	Number of Counselors	Number of Schools	Total School Enrollment	Enrollment Served
Senior High School	148	112	100,770	70,525
Academic	136	104	93,604	64,685
Vocational	12	8	7,166	5,840
Junior High School	180 (1)	314	147,050	85,135
Urban		173	108,206	68,426
Rural		141	38,844	16,709
Elementary School	17 (2)	19	12,552	12,552
Urban	14	16	9,578	9,578
Rural	3	3	2,964	2,964
Post-Secondary Centers	17	17	7,860	6,805
Technical Institutes	2	2	828	753
Special Vocational	3	3	2,755	1,775
Out-of-School Youth	5	5	3,772	3,772
Special Adult	6	6	434	434
Other	1 (3)	1	71	71
Total - All levels	362	462	268,282	175,017

(1) Counselors serve more than one Junior High School
(2) Career Education Projects
(3) State Orphan Center

Table XII

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971 - 72

GRAND TOTALS

	- - - - Courses of Instruction - - - -							
	New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
By Occupational Areas	187	692	241	94	2,043	2,284	2,471	3,070
Trades & Industry	39	514	203	50	754	1,121	996	1,685
Technical Education	1	6	1	2	30	31	32	39
Office Education	14	8	8	7	374	403	395	418
Distributive Education	67	68	1	5	364	297	432	370
Home Economics (Gainful)	41	45	0	0	181	177	222	222
Health Education	18	43	25	30	227	145	270	218
Agriculture	7	8	3	0	111	110	121	118
By Instructional Levels	187	692	241	94	2,043	2,284	2,471	3,070
Secondary	44	301	66	35	1,043	1,209	1,153	1,545
Post-Secondary	54	269	123	49	377	635	554	953
Adults	89	122	52	10	623	440	764	572
By Target Population	187	692	241	94	2,043	2,284	2,471	3,070
Regular Students	125	225	115	36	1,669	1,256	1,909	1,517
Disadvantaged	56	420	109	58	353	1,008	518	1,486
Handicapped	6	47	17	0	21	20	44	67

Table XIII

Trades and Industry - (See Table XIV)

1. There is marked and conspicuous difference in the Trades and Industry Program between what was planned for 1971-72 and what was produced or achieved during the year. The total number of courses of instruction at all levels and for all target population shows a difference of 689 courses. (996 planned as compared to 1,689 achieved.)

2. There was consistency between what was planned and what was achieved for regular students in the "continuing" courses at the secondary level, but there was a marked inconsistency in the "expanded" and the "new" courses. There were 4 courses planned in the secondary level, while the Trades and Industry Program produced 232 courses. The reasons for these discrepancies were placed on the stress given by the Secretary of Education to vocational training and the new Norms on Organization of Vocational Courses, issued by the Department of Education.

3. There was also a marked inconsistency between what was planned and what was achieved, at all levels, for the Disadvantaged persons. In the secondary level there were 29 courses planned, while the Trades and Industry Program produced 251 courses. In the post-secondary level, there were 144 courses planned, but they produced 599 courses. The reasons for these discrepancies were as explained above. Also, additional funds were allocated from Model City appropriation.

4. While the "continuing" and the "new" courses of instruction were markedly increased, there was a decrease in the number of "expanded" courses. This was due to two reasons:
   (a) vocational offerings opened in all the high schools for the first time, and
   (b) increase in facilities for vocational offerings provided to these schools having already occupational training.

5. The total enrollment at all levels of instruction in the Trades and Industry area was increased from previous year by over 1,000 students. (21,613 students in 1970-71 and students in 1971-72.) The enrollment achieved this year (22,628) was almost equal to what was planned to be served (22,078).

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971-72

Occupational Area (1) — TRADES AND INDUSTRY

Levels and Targets	- - - - Courses of Instruction - - - -							
	New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Secondary	4	232	49	13	438	690	491	935
Regular	0	133	28	6	423	545	451	684
Disadvantaged	0	99	14	7	15	145	29	251
Handicapped	4	0	7	0	0	0	11	0
Post-Secondary	30	227	109	36	201	414	340	677
Regular	20	0	34	5	141	40	195	45
Disadvantaged	10	197	75	31	59	371	144	599
Handicapped	0	30	0	0	1	3	1	33
Adults	5	55	45	1	115	17	165	93
Regular	5	21	23	0	99	5	127	26
Disadvantaged	0	33	13	1	14	12	27	46
Handicapped	0	1	9	0	2	0	11	1
Totals	39	514	203	50	754	1121	996	1685
Regular	25	154	85	11	663	590	773	755
Disadvantaged	10	329	102	39	88	528	200	896
Handicapped	4	31	16	0	3	3	23	34

Table XIV

Technical Education - (See Table XV)

1. The Technical Education area produced or achieved more courses of instruction during the year 1971-72 than those planned for. A total of 39 courses were achieved as compared to 32 courses planned. This is particularly manifested in the "new" courses organized.

2. There was some decrease in the number of "continuing" courses in this area of Technical Education. This was true at all levels of instruction.

3. Seven (7) "continuing" courses were informed as for disadvantaged persons, in the post-secondary level, but they were not included in the Plan for 1971-72. The Advisory Council wonders how this can happen.

4. No courses were organized by the Technical Education area for Handicapped persons. The report submitted by the Director of the Program gives no reason for this limitation. Occupational Courses in the secondary level were organized by the area of Trades and Industry.

5. The total enrollment at all levels of instruction in the Technical Education area was increased from previous year by 119 students. (1,580 students in 1970-71 as compared to 1,699 students in 1971-72). The enrollment achieved this year (1,699) was over a hundred students more than what was planned to be served (1,527).

VTE PROGRAMS PLANNED AND ACHIEVED
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Occupational Area (2) — TECHNICAL EDUCATION

Levels and Targets	- - - - Courses of Instruction - - - -							
	New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Secondary	0	0	0	0	0	0	0	0
Regular	0	0	0	0	0	0	0	0
Disadvantaged	0	0	0	0	0	0	0	0
Handicapped	0	0	0	0	0	0	0	0
Post-Secondary	1	1	0	0	22	26	23	27
Regular	1	0	0	0	21	19	22	19
Disadvantaged	0	1	0	0	0	7	0	8
Handicapped	0	0	0	0	1	0	1	0
Adults	0	5	1	2	8	5	9	12
Regular	0	5	1	2	8	5	9	12
Disadvantaged	0	0	0	0	0	0	0	0
Handicapped	0	0	0	0	0	0	0	0
Totals	1	6	1	2	30	31	32	39
Regular	1	5	1	2	29	24	31	31
Disadvantaged	0	1	0	0	0	7	0	8
Handicapped	0	0	0	0	1	0	1	0

Table XV

Office Education - (See Table XVI)

1. The Office Education area achieved during the FY 1971-72 a total of 418 instructional courses, which are 23 courses more than those planned for. There was a marked decrease in the number of courses achieved for the regular students as compared to those planned, while on the contrary, there was a large increase in the number of courses achieved for the disadvantaged students as compared to those planned. Most of these were "continuing" courses, which shows a possible mistake in the classification of the population served. This condition was more conspicuous in the secondary level.

2. The Office Education area was very accurate in the planning of instructional courses for the secondary level. This is shown by almost the same number of courses produced or achieved during the year as planned for. There is a possible mistake in the classification of the population served.

3. A total of 124 "continuing" courses were informed as achieved for disadvantaged persons in the secondary level, but they were not included in the Plan for 1971-72. The Advisory Council wonders how this can happen.

4. All "continuing" courses were increased in number. Limitations were on the "new" courses opened, and courses "expanded". A post-secondary regular expansion course was delayed in Caguas High School, as well as in Miguel Such Vocational School.

5. The total enrollment at all levels of instruction in the Office Education area was increased from previous year by nearly 2,000 students. (18,436 students in 1970-71 as compared to 20,331 students in 1971-72). The enrollment achieved this year (20,331) was over 4,000 students more than what was planned to be served (16,135). The Advisory Council wonders why the Office Education area planned to have this year less enrollment (16,135) than what they had last year (18,436).

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971 - 72

Occupational Area (3) — OFFICE EDUCATION

Levels and Targets	- - - - Courses of Instruction - - - -							
	New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Secondary	6	6	7	7	259	259	272	272
Regular	4	0	7	1	258	134	269	135
Disadvantaged	0	4	0	6	0	124	0	134
Handicapped	2	2	0	0	1	1	3	3
Post-Secondary	7	1	0	0	55	82	62	83
Regular	4	1	0	0	13	23	17	24
Disadvantaged	3	0	0	0	42	59	45	59
Handicapped	0	0	0	0	0	0	0	0
Adults	1	1	0	0	60	62	61	63
Regular	1	1	0	0	60	60	61	61
Disadvantaged	0	0	0	0	0	2	0	2
Handicapped	0	0	0	0	0	0	0	0
Totals	14	8	8	7	374	403	395	418
Regular	9	2	7	1	331	217	347	220
Disadvantaged	3	4	0	6	42	185	45	195
Handicapped	2	2	0	0	1	1	3	3

Table XVI

Distribution Education - (See Table XVII)

1. The Distributive Education area was short in producing or achieving the number of courses of instruction planned for 1971-72. From a total of 432 courses planned, they achieved only 370 courses. The largest difference was in the "continuing" courses for regular students, in which they lost 78 courses.

2. There was an increase in the number of courses achieved in the secondary level, as compared to those planned. Most of them were "continuing" courses. The discrepancies between the courses planned and achieved among regular and disadvantaged students may be due to a possible mistake in the classification of the population served.

3. The Distributive Education area had a large number (68) of "new" courses of instruction opened at all levels and for all population targets. Also this area opened a large number of courses for handicapped persons (25).

4. The most outstanding progress of the Distributive Education area was shown in the courses offered for Adults, which, although short by the number of courses planned, still had the highest priority and achievement in the total program. This includes all target population: regular students, disadvantaged and handicapped persons.

5. The total enrollment of all levels of instruction in the Distributive Education area was increased from previous year, by 791 students. (10,363 students in 1970-71 as compared to 11,104 students in 1971-72). The enrollment achieved this year (11,104) was short by 1,278 students to what was planned to be served (12,382).

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971 - 72

Occupational Area (4) - DISTRIBUTIVE EDUCATION

Levels and Targets	- - - - Courses of Instruction - - - -							
	New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Secondary	7	10	0	0	42	42	49	52
Regular	7	6	0	0	42	29	49	35
Disadvantaged	0	4	0	0	0	13	0	17
Handicapped	0	0	0	0	0	0	0	0
Post-Secondary	3	19	1	5	22	38	26	62
Regular	3	6	1	5	22	18	26	29
Disadvantaged	0	13	0	0	0	20	0	33
Handicapped	0	0	0	0	0	0	0	0
Adults	57	39	0	0	300	217	357	256
Regular	42	13	0	0	249	188	291	201
Disadvantaged	15	13	0	0	41	17	56	30
Handicapped	0	13	0	0	10	12	10	25
Totals	67	68	1	5	364	297	432	370
Regular	52	25	1	5	313	235	366	265
Disadvantaged	15	30	0	0	41	50	56	80
Handicapped	0	13	0	0	10	12	10	25

Table XVII

Home Economics (Gainful) - (See Table XVIII)

1. The Section of Occupational Home Economics area achieved the same number of instructional courses as planned for 1971-72. From a total of 222 courses planned, they produced or achieved 222 courses. This consistency between planning and achievement was maintained both for the "continuing" courses and for the "new" courses opened.

2. No courses were "expanded" by the Home Economics Gainful Section. This was due to the nature of the occupational courses.

3. Over 80% of the instructors utilized by the Occupational Home Economics Section to train people for jobs (182 out of 220) were teachers from the Homemaking Section. Those instructors were contracted on a part-time basis.

4. The total enrollment at all levels of instruction in the Occupational Home Economics Section was increased from previous year by 1,308 students. (2,905 students for 1970-71 as compared to 4,213 students in 1971-72) The enrollment achieved this year (4,213) was 638 students more than what was planned to be served (3,575 students).

5. The total enrollment at all levels of instruction in the other Section of Home Economics - Useful or Homemaking - was increased from previous year by 3,583 students. (61,688 students in 1970-71 as compared to 65,271 students in 1971-72.) The enrollment achieved this year (65,271) was 178 students more than what was planned to be served (65,093 students).

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971 - 72

Occupational Area (5) - HOME ECONOMICS (Gainful)

Levels and Targets	- - - - Courses of Instruction - - - - New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Secondary	19	22	0	0	90	88	109	110
Regular	14	13	0	0	60	58	74	71
Disadvantaged	5	8	0	0	30	30	35	38
Handicapped	0	1	0	0	0	0	0	1
Post-Secondary	4	11	0	0	23	24	27	35
Regular	0	0	0	0	0	0	0	0
Disadvantaged	4	11	0	0	23	22	27	33
Handicapped	0	0	0	0	0	2	0	2
Adults	18	12	0	0	68	65	86	77
Regular	0	0	0	0	6	6	6	6
Disadvantaged	18	12	0	0	58	57	76	69
Handicapped	0	0	0	0	4	2	4	2
Totals	41	45	0	0	181	177	222	222
Regular	14	13	0	0	66	64	80	77
Disadvantaged	27	31	0	0	111	109	138	140
Handicapped	0	1	0	0	4	4	4	5

Table XVII

Health Education - (See Table XIX)

1. The Health Education area was short in producing or achieving the number of courses of instruction planned for 1971-72. From a total of 270 courses planned they achieved only 218 courses. The largest difference was in the "continuing" courses in which they lost 82 courses.

2. On the other hand, the Health Education area produced 43 "new" instructional courses, when they had planned only 18 courses. The largest difference was in the secondary regular students level, where they produced 22 courses out of only 2 courses planned.

3. The Health Education area planned 247 courses for regular students, but produced 130. They planned 23 courses for disadvantaged persons, but produced 88 courses. Most of these were "continuing" courses, which shows a possible mistake in the classification of population served.

4. No courses were organized by the Health Education area for handicapped persons. The report submitted by the Director of the Program gives no reason for this limitation.

4. The total enrollment at all levels of instruction in the Health Education area was increased from previous year by 317 students. (1,540 students in 1970-71 as compared to 1,857 students in 1971-72.) The enrollment achieved this year (1,857) was nearly 400 students short to what was planned to be served (2,200).

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971-72

Occupational Area (6) — HEALTH EDUCATION

Levels and Targets	- - - - Programs of Instrucion - - - - New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Secondary	2	26	6	15	173	91	181	132
Regular	2	22	1	13	159	84	162	119
Disadvantaged	0	4	5	2	14	7	19	13
Handicapped	0	0	0	0	0	0	0	0
Post-Secondary	8	7	13	8	44	42	65	57
Regular	8	2	11	4	42	5	61	11
Disadvantaged	0	5	2	4	2	37	4	46
Handicapped	0	0	0	0	0	0	0	0
Adults	8	10	6	7	10	12	24	29
Regular	8	0	6	0	10	0	24	0
Disadvantaged	0	10	0	7	0	12	0	29
Handicapped	0	0	0	0	0	0	0	0
Totals	18	43	25	30	227	145	270	218
Regular	18	24	18	17	211	89	247	130
Disadvantaged	0	19	7	13	16	56	23	88
Handicapped	0	0	0	0	0	0	0	0

Table XIX

Agriculture Education - (See Table XX)

1. The Agriculture Education area planned for 1971-72 a total of 121 instructional courses, of which they produced or achieved 118 courses. They planned 65 courses for regular students, but they produced only 39 courses. They planned 56 courses for disadvantaged persons, but produced 79 courses. Most of these were "continuing" courses, which shows a possible mistake in the classification of the population served. This condition was most conspicuous in the secondary level, and in the "new" courses.

2. The Agriculture Education area opened 5 "new" centers during the year in the Urban high schools of Ponce, Corozal and Orocovis, and in Rural Junior high schools of Juncos and Aguas Buenas. Also they opened 3 "new" centers in the post-secondary level in Quebradillas, Lares and Río Grande.

3. No courses were "expanded" by the Agriculture Education area during the year. They planned 3 courses for expansion for regular students, but failed to produce them because of "existing agriculture teachers shortage in Puerto Rico".

4. No courses were organized by the Agriculture Education area for Handicapped persons, because "of insufficient enrollment".

5. The total enrollment at all levels of instruction in the Agriculture Program was increased from previous year by 867 students. (6,461 students in 1970-71 as compared to 7,328 students in 1971-72) The enrollment achieved this year (1971-72) was almost the same as what was planned to be served.

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971-72

Occupational Area (7) — AGRICULTURE

Levels and Targets	- - - Courses of Instruction - - - -							
	New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Secondary	6	5	3	0	39	39	48	44
Regular	6	2	3	0	39	20	48	22
Disadvantaged	0	3	0	0	0	19	0	22
Handicapped	0	0	0	0	0	0	0	0
Post-Secondary	1	3	0	0	10	9	11	12
Regular	0	0	0	0	0	0	0	0
Disadvantaged	1	3	0	0	10	9	11	12
Handicapped	0	0	0	0	0	0	0	0
Adults	0	0	0	0	62	62	62	62
Regular	0	0	0	0	17	17	17	17
Disadvantaged	0	0	0	0	45	45	45	45
Handicapped	0	0	0	0	0	0	0	0
Totals	7	8	3	0	111	110	121	118
Regular	6	2	3	0	56	37	65	39
Disadvantaged	1	6	0	0	55	73	56	79
Handicapped	0	0	0	0	0	0	0	0

Table XX

VTE PROGRAMS PLANNED AND ACHIEVED FOR 1971 - 72

Level of Instruction (2) - POST-SECONDARY

Areas and Targets	- - - - Courses of Instruction - - - - New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Trades and Industry	30	227	109	36	201	414	340	677
Regular	20	0	34	5	141	40	195	45
Disadvantaged	10	197	75	31	59	371	144	599
Handicapped	0	30	0	0	1	3	1	33
Technical Education	1	1	0	0	22	26	23	27
Regular	1	0	0	0	21	19	22	19
Disadvantaged	0	1	0	0	0	7	0	8
Handicapped	0	0	0	0	1	0	1	0
Office Education	7	1	0	0	55	82	62	83
Regular	4	1	0	0	13	23	17	24
Disadvantaged	3	0	0	0	42	59	45	59
Handicapped	0	0	0	0	0	0	0	0
Distributive Education	3	19	1	5	22	38	26	62
Regular	3	6	1	5	22	18	26	29
Disadvantaged	0	13	0	0	0	20	0	33
Handicapped	0	0	0	0	0	0	0	0
Home Economics(Gainful)	4	11	0	0	23	24	27	35
Regular	0	0	0	0	0	0	0	0
Disadvantaged	4	11	0	0	23	22	27	33
Handicapped	0	0	0	0	0	2	0	2
Health Education	8	7	13	8	44	42	65	57
Regular	8	2	11	4	42	5	61	11
Disadvantaged	0	5	2	4	2	37	4	46
Handicapped	0	0	0	0	0	0	0	0
Agriculture	1	3	0	0	10	9	11	12
Regular	0	0	0	0	0	0	0	0
Disadvantaged	1	3	0	0	10	9	11	12
Handicapped	0	0	0	0	0	0	0	0
Total Post-Secondary	54	269	123	49	377	635	554	953
Regular	36	9	46	14	239	105	321	128
Disadvantaged	18	230	77	35	136	525	231	790
Handicapped	0	30	0	0	2	5	2	35

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971 - 72

Level of Instruction (1) - SECONDARY

Areas and Targets	- - - - Courses of Instruction - - - -							
	New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Trades and Industry	4	232	49	13	438	690	491	935
Regular	0	133	28	6	423	545	451	684
Disadvantaged	0	99	14	7	15	145	29	251
Handicapped	4	0	7	0	0	0	11	0
Technical Education	0	0	0	0	0	0	0	0
Regular	0	0	0	0	0	0	0	0
Disadvantaged	0	0	0	0	0	0	0	0
Handicapped	0	0	0	0	0	0	0	0
Office Education	6	6	7	7	259	259	272	272
Regular	4	0	7	1	258	134	269	135
Disadvantaged	0	4	0	6	0	124	0	134
Handicapped	2	2	0	0	1	1	3	3
Distributive Education	7	10	0	0	42	42	49	52
Regular	7	6	0	0	42	29	49	35
Disadvantaged	0	4	0	0	0	13	0	17
Handicapped	0	0	0	0	0	0	0	0
Home Economics(Gainful)	19	22	0	0	90	88	109	110
Regular	14	13	0	0	60	58	74	71
Disadvantaged	5	8	0	0	30	30	35	38
Handicapped	0	1	0	0	0	0	0	1
Health Education	2	26	6	15	173	91	181	132
Regular	2	22	1	13	159	84	162	119
Disadvantaged	0	4	5	2	14	7	19	13
Handicapped	0	0	0	0	0	0	0	0
Agriculture	6	5	3	0	39	39	48	44
Regular	6	2	3	0	39	20	48	22
Disadvantaged	0	3	0	0	0	19	0	0
Handicapped	0	0	0	0	0	0	0	0
Total Secondary	44	301	66	35	1,043	1,209	1,153	1,545
Regular	33	176	39	20	981	870	1,053	1,066
Disadvantaged	5	122	19	15	59	338	83	475
Handicapped	6	3	8	0	3	1	17	4

Table XXI

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971 - 72

Level of Instruction (3) - ADULTS

Areas and Targets	- - - - Courses of Instruction - - - - New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Trades and Industry	5	55	45	1	115	17	165	73
Regular	5	21	23	0	99	5	127	26
Disadvantaged	0	33	13	1	14	12	27	46
Handicapped	0	1	9	0	2	0	11	1
Technical Education	0	5	1	2	8	5	9	12
Regular	0	5	1	2	8	5	9	12
Disadvantaged	0	0	0	0	0	0	0	0
Handicapped	0	0	0	0	0	0	0	0
Office Education	1	1	0	0	60	62	61	63
Regular	1	1	0	0	60	60	61	61
Disadvantaged	0	0	0	0	0	2	0	2
Handicapped	0	0	0	0	0	0	0	0
Distributive Education	57	39	0	0	300	217	357	256
Regular	42	13	0	0	249	188	291	201
Disadvantaged	15	13	0	0	41	17	56	30
Handicapped	0	13	0	0	10	12	10	25
Home Economics(Gainful)	18	12	0	0	68	65	86	77
Regular	0	0	0	0	6	6	6	6
Disadvantaged	18	12	0	0	58	57	76	69
Handicapped	0	0	0	0	4	2	4	2
Health Education	8	10	6	7	10	12	24	29
Regular	8	0	6	0	10	0	24	0
Disadvantaged	0	10	0	7	0	12	0	29
Handicapped	0	0	0	0	0	0	0	0
Agriculture	0	0	0	0	62	62	62	62
Regular	0	0	0	0	17	17	17	17
Disadvantaged	0	0	0	0	45	45	45	45
Handicapped	0	0	0	0	0	0	0	0
Total Adults	89	122	52	10	623	440	764	572
Regular	56	40	30	2	449	281	535	323
Disadvantaged	33	68	13	8	158	145	204	221
Handicapped	0	14	9	0	16	14	25	28

Table XXIII

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971 - 72

Target Population(1) - REGULAR STUDENTS

Areas and Levels	- - - - Courses of Instruction - - - - New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Trades and Industry	25	154	85	11	663	590	773	755
Secondary	0	133	28	6	423	545	451	684
Post-Secondary	20	0	34	5	141	40	195	45
Adults	5	21	23	0	99	5	127	26
Technical Education	1	5	1	2	29	24	31	31
Secondary	0	0	0	0	0	0	0	0
Post-Secondary	1	0	0	0	21	19	22	19
Adults	0	5	1	2	8	5	9	12
Office Education	9	2	7	1	331	217	347	220
Secondary	4	0	7	1	258	134	269	135
Post-Secondary	4	1	0	0	13	23	17	24
Adults	1	1	0	0	60	60	61	61
Distributive Education	52	25	1	5	313	235	366	265
Secondary	7	6	0	0	42	29	49	35
Post-Secondary	3	6	1	5	22	18	26	29
Adults	42	13	0	0	249	188	291	201
Home Economics(Gainful)	14	13	0	0	66	64	80	77
Secondary	14	13	0	0	60	58	74	71
Post-Secondary	0	0	0	0	0	0	0	0
Adults	0	0	0	0	6	6	6	6
Health Education	18	24	18	17	211	89	247	130
Secondary	2	22	1	13	159	84	162	119
Post-Secondary	8	2	11	4	42	5	61	11
Adults	8	0	6	0	10	0	24	0
Agriculture	6	2	3	0	56	37	65	39
Secondary	6	2	3	0	39	20	48	22
Post-Secondary	0	0	0	0	0	0	0	0
Adults	0	0	0	0	17	17	17	17
Totals	125	225	115	36	1,669	1,256	1,909	1,517
Secondary	33	176	39	20	981	870	1,053	1,066
Post-Secondary	36	9	46	14	239	105	321	128
Adults	56	40	30	2	449	281	535	323

Table XXIV

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971 - 72

Target Population (2) - DISADVANTAGED PERSONS

Areas and Levels	- - - - Programs of Instruction - - - - New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Trades and Industry	10	329	102	39	88	528	200	896
Secondary	0	99	14	7	15	145	29	251
Post-Secondary	10	197	75	31	59	371	144	599
Adults	0	33	13	1	14	12	27	46
Technical Education	0	1	0	0	0	7	0	8
Secondary	0	0	0	0	0	0	0	0
Post-Secondary	0	1	0	0	0	7	0	8
Adults	0	0	0	0	0	0	0	0
Office Education	3	4	0	6	42	185	45	195
Secondary	0	4	0	6	0	124	0	134
Post-Secondary	3	0	0	0	42	59	45	59
Adults	0	0	0	0	0	2	0	2
Distributive Education	15	30	0	0	41	50	56	80
Secondary	0	4	0	0	0	13	0	17
Post-Secondary	0	13	0	0	0	20	0	33
Adults	15	13	0	0	41	17	56	30
Home Economics(Gainful)	27	31	0	0	111	109	138	140
Secondary	5	8	0	0	30	30	35	38
Post-Secondary	4	11	0	0	23	22	27	33
Adults	18	12	0	0	58	57	76	69
Health Education	0	19	0	13	16	56	23	88
Secondary	0	4	5	2	14	7	19	13
Post-Secondary	0	5	2	4	2	37	4	46
Adults	0	10	0	7	0	12	0	29
Agriculture	1	6	0	0	55	73	56	79
Secondary	0	3	0	0	0	19	0	22
Post-Secondary	1	3	0	0	10	9	11	12
Adults	0	0	0	0	45	45	45	45
Totals	56	420	109	58	353	1,008	518	1,486
Secondary	5	122	19	15	59	338	83	475
Post-Secondary	18	230	77	35	136	525	231	790
Adults	33	68	13	8	158	145	204	221

Table XXVI

VTE PROGRAMS PLANNED AND ACHIEVED
FOR 1971 - 72

Target Population (3) - HANDICAPPED PERSONS

Areas and Levels	- - - - Courses of Instruction - - - - New		Expanded		Continuing		Total	
	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd	Plan'd	Ach'd
Trades and Industry	4	31	16	0	3	3	23	34
Secondary	4	0	7	0	0	0	11	0
Post-Secondary	0	30	0	0	1	3	1	33
Adults	0	1	9	0	2	0	11	1
Technical Education	0	0	0	0	1	0	1	0
Secondary	0	0	0	0	0	0	0	0
Post-Secondary	0	0	0	0	1	0	1	0
Adults	0	0	0	0	0	0	0	0
Office Education	2	2	1	0	3	1	3	3
Secondary	2	2	0	0	1	1	3	3
Post-Secondary	0	0	0	0	0	0	0	0
Adults	0	0	0	0	0	0	0	0
Distributive Education	0	13	0	0	10	12	10	25
Secondary	0	0	0	0	0	0	0	0
Post-Secondary	0	0	0	0	0	0	0	0
Adults	0	13	0	0	10	12	10	25
Home Economics (Gainful)	0	1	0	0	4	4	4	5
Secondary	0	1	0	0	0	0	0	1
Post-Secondary	0	0	0	0	0	2	0	2
Adults	0	0	0	0	4	2	4	2
Health Education	0	0	0	0	0	0	0	0
Secondary	0	0	0	0	0	0	0	0
Post-Secondary	0	0	0	0	0	0	0	0
Adults	0	0	0	0	0	0	0	0
Agriculture	0	0	0	0	0	0	0	0
Secondary	0	0	0	0	0	0	0	0
Post-Secondary	0	0	0	0	0	0	0	0
Adults	0	0	0	0	0	0	0	0
Totals	6	47	17	0	21	20	44	67
Secondary	6	3	8	0	3	1	17	4
Post-Secondary	0	30	0	0	2	5	2	35
Adults	0	14	9	0	16	14	25	28

Table XXVI

REACTION OF THE COMMONWEALTH BOARD FOR VOCATIONAL AND TECHNICAL EDUCATION TO LAST YEAR RECOMMENDATIONS

The Second Annual Evaluation Report (1971) of the Advisory Council was submitted to the State Board for Vocational and Technical Education, in a meeting of the Board on November 30, 1971. The Board reviewed the Report and discussed its recommendation. Action was then taken by the Board in the sense of receiving the Report of the Advisory Council, but with a response as to each of the recommendations.

The response of the Board in the form of comments to the recommendations made by the Advisory Council, are made part of this Third Annual Evaluation Report. Action taken by the Board is reflected in the implementation of VTE programs and services described in the Report.

Last year recommendations, together with the responses, were as follows :

Recommendation 1.

Authorize and fund the position of Assistant Deputy Director for Vocational and Technical Education at the Regional Level, responsible for those administrative and operational responsibilities appropriate to that level and vocational programs carried on therein.

Comments : The Board for Vocational and Technical Education has accepted this recommendation. In fact, AVTE had initiated this recommendation, since the Board appointed an Assistant Deputy Director for Vocational and Technical Education for the San Juan Educational Region in August, 1971. Such appointments will be made for other educational regions as additional experience is gained on the functioning and effectiveness of this officer and as additional financial resources are made available to the Puerto Rico Department of Education by the Legislature.

Recommendation 2.

Design and implement a public information program to disseminate information about the availability of an educational

opportunity that will result in a creditable, dignified way of life for the student, qualified employees for employers, and vocational education as a major contributor to Puerto Rico's continued growth and development.

Comments: The Puerto Rico Department of Education has used the mass media of television, press, radio, exhibitions, lectures, etc., to show to the people at large, employers, and young people the implication of vocational and technical education for the future growth and development of Puerto Rico. The Department has recruited additional staff, consisting of one television technician, two commercial artists, and one photographer-cameragrapher, in recent months and has attached them to the Promotion Office of AVTE. The Promotion Office is to begin soon on the preparation of a long-term plan and design for a public information program. This plan will have specific objectives, time schedule and budget.

Recommendation 3.

Expand the public vocational-technical education TV Channel facilities to meet the needs of the population unable to attend regular vocational school classes.

Comments: The Department of Education operates an educational television station. Through this station, a number of educational programs are relayed to the people of Puerto Rico. One of these programs, an evening course on installation and maintenance of air conditioning for automobiles was offered last school year for disadvantaged unemployed out of school youths. A new televised occupational course for a similar audience deals with electro-mechanics. This program, which is being given two times a week, in the evenings, provides for practical workshop training during Saturday mornings at seven area vocational schools. The effectiveness of the program is being evaluated by the Department with a view to determining to what extent and in what direction the Department's television facilities should continue to be used to reach the people, particularly unemployed, out of school, disadvantaged youths, in the area of vocational and technical education. It may be noted that the Department has undertaken a complete overhaul of the physical plant of the television station as well as having bought new equipment for color television. It also plans to develop more materials as soon as the effectiveness of the electromechanics program is adequately determined.

Recommendation 4.

Make a thorough study of the nature and problem of guidance and counseling so as to determine the needs in this critical area, where we have a very high ration of students to counselors of 820 to 1.

Comments : The Board has been highly conscious of this problem and has undertaken measure which could improve this ratio. In fiscal 1969, the ratio of students to a counsellor was 934:1. The goal for 1970 was to reduce this ratio to 880:1. The goal was surpassed by the fact that AVTE recruited 58 additional counselors in 1970-71, increasing the total to 320, or an increase of 22 per cent. Some of the increase in the number of counselors was offset by increase in enrollment in secondary education.

Recommendation 5.

Re-examine the major occupational clusters from the point of view of establishing more appropriate balances and lengths of time between academic and occupational education since many occupational clusters in the secondary education area may require less than three years of preparation and occupational instruction as required now.

Comments: The long-term plan for AVTE provides for exposure and exploratory experience in a cluster of occupations during 1972-73 so that the students will be able to select a trade of their choice for intensive training in trade and industry. Through this program, the number of students trained in fiscal 1973 will be increased to 533 and to about 900 by 1977, as compared to 100 in fiscal 1972. Under this program, a cluster of occupations with emphasis on laboratory work will be provided in five selected area vocational schools. In addition, guidance counseling including follow-up of learning experiences will be provided to more than 500 students in the cluster on trades and industry. As a part of the program, the present classroom slots will be reduced and the drop-out rate will be diminished.

To realize the above goals, AVTE has undertaken a thorough evaluation of mix between academic and occupational education. Major concern in this evaluation is as to how to prepare students academically who are in AVTE so that the students have greater manipulative skills and can adjust to new technology and situations as they develop. The Department has prepared a program to recruit a number of experts to undertake this task in the near future.

New recommendations - Goals I and III

Recommendation 1.

That both the State and Local plans be developed in a manner reflective of planning for yearly activities, the unexpected outcomes, and the follow-up or evaluation of the same. These plans should become a management tool used throughout the year for direction and to enable administrators to provide more effective supervision and management over program operation and expenditure of funds.

Comments: The Department of Education of Puerto Rico has organized, since three years ago, a Division of Educational Planning. This division has a very wide responsibility in the areas of educational planning, evaluation and research and covers all Department educational activities. In addition, AVTE has appointed one technician on a fulitime basis to develop the necessary plans and programs throughout the year. AVTE has already prepared two 5-year plans and is in the process of preparing a third 5-year plan. The plans have been used for evaluation of realization of objectives and goals, as well as in evaluation of overcoming their financial or manpower scarcities. This does not mean that planning in AVTE does not require strengthening. In fact, we do recognize the need for better and all-round planning and intend to take the necessary measures to improve further the performance of this area.

Recommendation 2.

That the AVTE use the coordinated electronic system of data collection and print-out for program planning as an aid to administrative decisions.

Comments: The AVTE is a part of the structure of the total Department of Education. It is strongly felt by the Department that the information system for education should cover all aspects of education. Recently, an expert in the area of management information systems has been recruited to design an information system. Since the Department already owns and operates an IBM 360 computer, there will be no delay in implementing the information system as soon as the system is prepared and ready for operation. It is believed that the System will provide for necessary outputs and reports, including those for vocational and technical education. These reports would be made available to the decision-makers at appropriate intervals.

Recommendation 3.

That the State Board for Vocational Education through its staff establish a task force which must take affirmative action within four (4) months to delineate how the State Plan will be written so that both the State Plan and the data collection system will be compatible.

Recommendation 4.

That the State Board of Vocational Education request the Director of AVTE to establish a State Plan Writing Committee to work throughout the year with a goal of completion of the State Plan for April of each year.

Comments : A committee consisting of the chief planner of AVTE and 10 program directors was appointed on December 6, 1971. The committee has been given the responsibility to prepare a long-term plan covering the period 1973-77 and to prepare an annual plan for the year 1973. The committee has already met three times and during these meetings the following points were discussed:

1. Definition of a system
2. Collection of data and information necessary for plan preparation.
3. Discussion of guidelines for the preparation of the plan.
4. Specific responsiblity of committee participants toward the long-term and annual plan.
5. Time schedule for the preparation of the plan and submission of the plan to necessary committees and groups.

It is expected that the state plan for Puerto Rico will be ready by April 1972.

Recommendation 5.

That the Area for Vocational and Technical Education approach the Secretary of Education and the Legislature, if necessary, for a new modern streamlined purchasing system for use by the AVTE.

Comments: The Puerto Rico Department of the Treasury has the central responsibility for designing regulations for purchasing educational materials, books, and equipment for the Department of Education and other government agencies. During the past three years the Department of Education has been authorized, on an experimental basis, to handle all matters concerning purchasing of books, materials and equipment for all vocational programs sponsored by the AVTE. However, further changes are needed that may require amendments in legislation, and the Secretary of Education is making very serious efforts toward this end.

Recommendation 6.

That the State Board of Vocational Education with the staff meet with the Secretary of Education to outline a flexible certification code for vocational and technical education teachers which emphasizes up-to-date employment experience and professional competence as well as academic background.

Comments: The laws of Puerto Rico provide that persons teaching in the public schools must comply with certain basic requirements, such as citizenship, academic training, experience, age, etc. These characteristics provide for industrial education personnel. Periodic revisions to the present certification regulations provide for introducing the necessary changes as to professional and academic requirements that provides for an up-to-date certification system.

Recommendation 7.

That the State Board of Vocational Education through its staff require that at least each Comprehensive High School and Technical Institute include provision for a system

of placement and follow-up of all vocational and technical students. This should be required in the local plan of each of these schools.

Comments: The Board has ordered a detailed investigation and feasibility study of this recommendation. It is felt that the recommendation can only be carried out over a number of years at an exorbitant cost. Nevertheless, the Board wishes to investigate this area fully in the near future.

Recommendation 8.

That the State Board of Vocational Education through its staff initiate a pilot or demonstration program of occupational information beginning in the elementary school and that additional funding be provided to expand the industrial arts program to reach more students at the Junior High School level.

Comments: The Department of Education has planned to establish a coordinated program of occupational awareness as an integral part of the total elementary program. This activity will include identification of ways of involving para-professionals, parents, business and industry in programs designed to promote awareness of work. Secondly, the Department will initiate through regional vocational supervisors a system to incorporate occupational orientation into elementary curricula. Thirdly, the Department will adopt and publish occupational information brochures for elementary level students. Fourthly, the Department will continue to promote occupational awareness at the elementary level through inservice education. Fifthly, the Department will expand the number of consumer-homemaking activities at the 4th and 6th grade levels which will help children to develop consumer knowledge.

Regarding industrial arts, the program has been allocated $286,000 for program expansion during FY 1973.

Recommendation 9.

That the Advisory Council working with the State Board of Vocational Education and staff promote the improvement of the administration of vocational and technical education through programs such as seminars for chief school administrators such as Superintendents, Junior College Presidents, Deans of academic subjects and various agency board members.

Comments: The Department of Education has already conducted a number of seminars in various areas of management and administration for the superintendents, selected principals, regional directors, and deans of academic subjects. The materials emerging from these seminars are being published by the Department in the form of books. The Department will continue to pursue this policy of giving seminars in the next few years.

Recommendation 10.

That the State Board of Vocational and Technical Education, working through its staff, emphasize the training of Handicapped persons with at least 50 additional programs within the year 1972-73 to make up ground lost over the past two years.

Comments: There are approximately 2,000 trainable handicapped children in the 5-15 age group. Among these, approximately 500 are attending public vocational-technical education programs. A development of 50 programs, as recommended by the Council, would require doubling of facilities within one year. It is a well-known fact that it requires greater effort to teach a handicapped student as compared with a normal student. To double facilities in one year will constitute an unsurmountable task. Therefore, the Department plans to add 10 more programs which will increase the handicapped enrollment by 20% in a year. We consider that goal to be a reasonable one.

Recommendation 11.

That the State Board of Vocational and Technical Education, through its staff, request future studies be written in such a way that the time lag may be greatly reduced between the time the study or report is accepted (completed) and the implementation of same in an active program of instruction.

Comments: The Board accepts this recommendation and strongly feels that the Department of Education has already accelerated substantially the implementation of accepted reports.

New Recommendations - Goal II

Recommendation 1.

It is recommended that a study be made to determine the extent to which vocational education is reaching all people at the secondary, post-secondary and adult levels in both public and private schools.

Comments: The Board accepts the recommendation and wishes to proceed with the study as soon as available resources permit.

Recommendation 2.

It is recommended that a global plan to bring the school closer to industry be formulated by encouraging instructors to take summer training in industry, by inducing industry to sponsor shops in particular schools, specially in those trades using costly and sophisticated equipment and by implementing as soon as possible the plan to allow the students to practice work in industry during their last year of training.

Comments: The Board feels that there are already a number of action programs being implemented by AVTE; however, these programs should be consolidated and new programs added in order to bring the school closer to industry.

Recommendation 3.

It is recommended that the Manpower and Training Needs Study be placed in the hands of all planning and curricular personnel to be used as guideline in the planning of all vocational-technical offerings now.

Comment: Necessary action has already been taken.

Recommendation 4.

It is recommended that greater emphasis be placed on the quality of counseling and placement services so that they may respond more adequately to the principle of "career" education and the new image of vocational-technical education.

Comments: The Department of Education continued to give emphasis to the quality of placement service, as it has done in the past several years.

Recommendation 5.

It is recommended that a master plan for all vocational-technical education in Puerto Rico be started so as to eliminate duplicity of efforts by various agencies offering education and training at this level. The specifications for a master plan for post-secondary vocational-technical education system in Puerto Rico being developed by Barton and Garrison, at the request of the Advisory Council, could be used by all agencies concerned in setting a vocational-technical course that may meet the demands of industry.

Comments: The Board accepts the recommendation of the Council and wishes to prepare a master plan for all vocational-technical education in Puerto Rico as soon as the resources available permit.

I AM WORK

I am the exercise of atoms,
the essence of being,
the power of life.

I am the precipitation of inspiration,
the operation of the mind,
the dedication of the hands.

I am the embrace of opportunity,
the application of the individual,
the fabrication of success.

I am the substance of history,
the master of times,
the projector of the future.

I am the spinner of delight
the builder of pleasure,
the creator of joy.

I am the progenitor of peace,
the warder of the world,
the Word of God.

For I am work.

Milford E. Shields
New Age, Sept. 1972

APPENDIXES

APPENDIX No. 1

A PLAN FOR COMPREHENSIVE COMMUNITY COLLEGE EDUCATION IN PUERTO RICO

SUMMARY OF A STUDY

The Advisory Council on Vocational and Technical Education, in its Second Annual Evaluation Report - 1971 - recommended that a coordinated plan should be drawn by all agencies in Puerto Rico offering postsecondary vocational-technical education, to avoid duplicity of training efforts. Specific reference was made to postulates identified by the Council :

1. There is duplicity of efforts in the organization of new programs at the technical level. The Technical Institutes, sponsored by the State Department of Education, the Regional Colleges of the University of Puerto Rico, and the technical schools of the private universities, are all trying to compete toward the same objectives.

2. An effective master plan must be implemented to eliminate the duplicity of efforts, based on a full recognition of the learning efficiencies which job-structured education programs must contain.

3. The master plan must evolve from the context of the real life demands vital to the future of hundreds of thousands of people. The master plan must insure relevance to the needs of the socio-economic structure and to the urgent demand for jobs in the real World of Work.

The Advisory Council contracted the services of Dr. Thomas E. Barton, Director of Greenville Technical Education Center in Greenville, South Carolina, and Dr. Don E. Garrison, Director of Tri-County Technical Education Center in Pendleton, South Carolina, with the purpose of drawing a master plan for all vocational and technical education in Puerto Rico. The contractors conducted a reliable study of the existing public postsecondary vocational-technical education facilities, and presented the report : A PLAN FOR COMPREHENSIVE COMMUNITY COLLEGE EDUCATION IN PUERTO RICO.

The highlights of the Report follows :

Purpose of the Study

Goal - To draw-up a master plan for the implementation of postsecondary vocational-technical education that will help to coordinate the public post-secondary vocational-technical education system in Puerto Rico.

Emphasis will be made on the development of postsecondary, vocational-technical education, the most important specific problems being as follows :

1. Provide a master plan for comprehensive community college education that will contribute to the solution of present socio-economic problems and the satisfactions of industrial development needs.

2. Investigate those areas which are now affected by postsecondary vocational-technical education in Puerto Rico and also those which will receive benefit of expanded emphasis on postsecondary vocational-technical education once the master plan is implemented.

The objectives to be considered, qualitatively as well as quantitatively, will be :

1. To make available adequate training programs for the huge numbers of young people and adults who do not continue their education at the university level.

2. To assist in present efforts to raise the per capita income standard of living by coordinating postsecondary vocational-technical education with economic development efforts.

3. To provide flexible training programs to meet present and future needs of business and industry.

4. To develop programs which will expand present efforts in providing equality of higher education opportunity by relevant education programs at low cost.

5. To provide justification for a strong public relations effort aimed at improving the image of postsecondary vocational-technical education.

6. To insure community involvement in the postsecondary vocational-technical education.

7. To insure integration and coordination of all manpower training programs at the secondary and postsecondary vocational-technical levels.

8. To insure that the specifications to be developed provide for the development and administration of a system of postsecondary vocational-technical education which is responsive to the needs of the people.

9. To develop specifications which will insure that all institutions, public and private, are partners in the postsecondary vocational-technical education effort.

Significance of the Study

Due to the industrial economic development plan in operation in Puerto Rico since 1947 (Operation Bootstrap), and due to the creation of the Economic Development Administration, there is need in Puerto Rico for the continued economic growth and educational development as it relates to the need for an availability of post-secondary vocational-technical education. It is therefore :

1. Essential that a plan to produce a trained labor force of technicians and skilled craftsmen be developed, and that this plan parallel the Island's commitment to economic growth.

2. That this master plan be based upon specific requirements to strengthen Puerto Rico's economic development program and to help meet the educational needs of the people. It must help correct discrepancies existing between the limitations in educational development opportunity of many persons and the high demand for a skilled labor force.

3. There is a need to reduce unemployment rate, specially among Puerto Rico's youths between 16 and 24 years of age. (The unemployment rate fluctuates between 25% and 28%, depending on age, civil status and economic situation.) The Governor's Advisory Council for the Development of Government Programs Report, September, 1970, brings the unemployment factor into sharp focus.

> " In the sixties, these (unemployment rates) have averaged from 10 to 15 percent of the labor force. The persistence of such unemployment after three decades of phenomenally rapid economic growth is probably the single greatest dilemma of social and economic policy. This is especially true as it is heavily the Island's youth."

The 1971 Second Annual Report of the Advisory Council for Vocational and Technical Education identifies two points which are significant to the need for the development of a master plan. In answer to specific questions relative to goals and priorities of the State Plan it responds as follows :

1. To what extent is there coordination and articulation among secondary, postsecondary and adult education agencies ?

   Answer : Secondary Vocational and postsecondary Technical Education (Technological Institutes) are under the same agency (Assistant Secretary for VTE), and within the same VTE structure. Adult Education, although under a separate Assistant Secretary of Education is within the general structure of the Department of Education, with an Under-Secretary of Education coordinating both Adult and VTE.

   There is no direct articulation with the Regional Community Colleges because these are under a different structure. According to the evaluators "private schools were not considered in planning VTE programs."

2. To what extent is vocational education involved in total manpower development programs of the State ?

Answer: Programs have been planned to develop manpower employment (in order of preference - 1970), in:

(1) Trades and Industry
(2) Office Education
(3) Distribution and Marketing
(4) Health
(5) Agriculture
(6) Home Economics (gainful)
(7) Technical Education

The Economic Report to the Governor makes the following breakdown for employment needs in Puerto Rico (in order of preference - 1970), in:

(1) Manufacturing
(2) Trade
(3) Services
(4) Government
(5) Agriculture
(6) Construction
(7) Transportation
(8) Public Utilities
(9) Finance
(10) Communication
(11) Mining
(12) Clothing Manufacturing

There are marked discrepancies between both priorities. For example: Manufacturing is the first priority for employment, while Technical Education is the last for training.

The 1971 Annual Report thus recognizes the lack of coordination and planning between the public and private sectors and also between governmental agencies. Thus, it is required:

1. Improvement and expansion in present training programs of public training institutions. This includes vocational and technical programs in high schools, vocational schools, technical institutions, junior and regional colleges (2 or 3 years) and four-year collegiate institutions. Examination of the enrollments and outputs of existing and planned programs reveals that these will not be sufficient to meet the needs. Therefore, it will be required an expansion of the plant and programs already existing, and the building of new plants and programs already planned.

2. A renewed emphasis is needed on every important aspect of vocational education:

a) The curriculum has to be modernized as does the equipment used and the teachers employed; it has to be made responsive to current and prospective labor markets needs; it has to be endowed with the same quality and status as the academic college pre-curricula have, and it needs a major infusion of innovative concepts and techniques.

b) To have the interest, activity and cooperation of industry and business.

Industry has to provide advice, counsel and resources for curricula and equipment; it has to provide trainers; it has to provide cooperative work programs; and it has to cooperate in job exposure efforts.

In spite of the success of industrial development in the Island since 1947, and the effort made by the government, and business and industry leaders to accelerate the industrialization process and the economic development, a series of problems still persist and there is urgency and need for a solution to:

1. An extremely high rate of unemployment, specially among the Island's youth (16 to 24 age group).

2. Lack of coordination, resource allocation and output of trained technicians and skilled craftsmen by the many agencies involved in manpower development.

3. Due to the limitation and scarcity of federal resources, it is critical to the future economic growth of Puerto Rico, that a planned, coordinated effort be made for the development of human resources, through postsecondary vocational and technical education. This effort must be responsive to the needs singled out as being of significant importance in the master plan for postsecondary education in Puerto Rico.

The master plan for comprehensive community college education will assist in the development of the natural industrial, and human resources of Puerto Rico to solve the socio-economic problems that affect the Island, and to meet the needs of a modern, technological society.

The "philosopy" of this plan stems from a clear vision of these problems, as expressed in the following statement by the Higher Education Facilities Planning Study for Puerto Rico, 1969:

1. The objective of providing education opportunities to all persons in order that they may fully develop their capabilities is an indisputable goal of a true democratic society.

2. Modern technological society increasingly demands more complex and advanced skills. It also has a great need for well-trained professional and administrative personnel to meet new and expanding job opportunities.

3. The rapid obsolescence of technology and skills requires a continuing education program for most technicians and professionals.

4. The fast developing industrialized society that has been achieved in Puerto Rico since World War II depended, in large measure, on trained manpower.

To provide a system of job structured education to meet the needs of unemployed and under-employed people, it becomes apparent that the analysis of the education problems of many regions with low per-capita income (areas of economic, social and cultural depression) reveals that: A SIGNIFICANT ECONOMIC GROWTH WILL FOLLOW THE PLANNING, DEVELOPMENT, AND IMPLEMENTATION OF COMPREHENSIVE POSTSECONDARY VOCATIONAL-TECHNICAL PROGRAMS.

Therefore, the people most involved in education and economic development must agree that some change is needed and that to provide a viable instrument for change, a coordinated plan is the first step necessary to be developed and tested before proceeding further with widespread implementation of new programs.

Assumptions

Fourteen assumptions have been formulated as being relevant to postsecondary education in Puerto Rico:

1. All of the people of Puerto Rico have the right to expect equal education and economic opportunity.

2. The overall social and economic development of Puerto Rico is not commensurate with the needs of the people.

3. All public postsecondary vocational-technical education programs will be developed to meet the socio-economic needs of high school graduates and adults seeking occupational education.

4. The present education system is not providing sufficient post-high school education opportunities with the range of services necessary to meet the social and economic needs of Puerto Rico.

5. More skilled workers should be trained for business and industry.

6. Elected and appointed officials will coordinate education and economic development in establishing criteria and plans for achieving desired goals and objectives.

7. A master plan for postsecondary technical education developed by this study will maximize the use of existing facilities, and planned programs will receive necessary support and funding to meet established goals and objectives.

8. In the development and implementation of a master plan for a postsecondary system of vocational-technical education, the expenditure of resources will be subject to specified accountability in achieving established goals and objectives.

9. Specifications for providing equal education opportunity will be developed and used in establising all postsecondary vocational-technical education programs.

10. Industrial and business leaders recognize the need for a master plan for postsecondary vocational-technical education and will support the development and implementation of such a plan.

11. The people of Puerto Rico are aware of the need to expand and broaden postsecondary vocational-technical programs and are willing to provide the necessary financial resources.

12. Private institutions will support a master plan for postsecondary vocational-technical education.

13. The Council for Higher Education, the Board of the University of Puerto Rico, the Commonwealth Advisory Council on Vocational and Technical Education and the Commonwealth Board for Vocational Education will support the development and implementation of a master plan for postsecondary vocational-technical education.

14. Fomento needs the support of a strong program of postsecondary vocational-technical education as a tool for industrial development.

Limitations of the Study

This Study is limited to:

1. Develop a master plan for a comprehensive community college education system in the Commonwealth of Puerto Rico without going into the financial aspect.

2. Concentrate on an evaluation of the present postsecondary vocational-technical education system along with related industrial and human resources which are needed to develop the total potential of Puerto Rico.

Simply stated, the study was limited to developing:

1. A description of the existing postsecondary education system and economic conditions.

2. An overview of the present socio-economic status.

3. Criteria for a comprehensive community college.

4. A description of the characteristics of a functional comprehensive community college.

5. A master plan for comprehensive community college education.

Design of the Study

The design of the study followed the basic pattern of descriptive research. It was aimed, therefore, to the description and interpretation of two-year postsecondary education in Puerto Rico today. It also identified critical factors such as conditions, relationships, points of view, existing attitudes, current practices, inadequately met needs, and trends. Data were interpreted and evaluated by comparing post-secondary vocational-technical education to accepted practices as derived from experience and the statements of recognized authorities in the operation of comprehensive community college education. As a result of this process, recommendations and conclusions are made. This study was designed to present the following categories of information:

1. Data which describe postsecondary education in Puerto Rico.

2. Data which describe the socio-economic status and needs.

3. Characteristics of a desired functional comprehensive community college.

4. A Master Plan for Comprehensive Community College Education.

The authors of this study presented a list of leaders of industry and business, and government agencies, that were interviewed in order to obtain information about present conditions of postsecondary education in Puerto Rico.

A selection of faculty and students of the Regional Colleges of the University of Puerto Rico were also interviewed.

Acknowledgement was made to those who assisted in the collection of pertinent data and provided documents and reports relative to the problem of this study.

The Master Plan presented in the study was an attempt to reconcile characteristics of a good community college program derived from experience and the writing of accepted authorities with socio-economic needs of the people of Puerto Rico, utilizing to the fullest extent possible the relevant resources of Puerto Rico.

THE PLAN

Legal Basis

1. To establish in Puerto Rico, by statutory law, a System of Community College Education, to deal with all programs and services provided by the public educational institutions concerning occupational education in the post-secondary level. Provisions should be made in the law, to prevent that these Community Colleges may develop into four-year liberal education institutions.

2. The System should include the existing technical institutes administered by the Board of Vocational Education, the Regional Colleges administered by the University of Puerto Rico, all programs on Manpower and Adult Training administered by the Department of Labor and Industrial Development Administration, and the Technical School of San Juan.

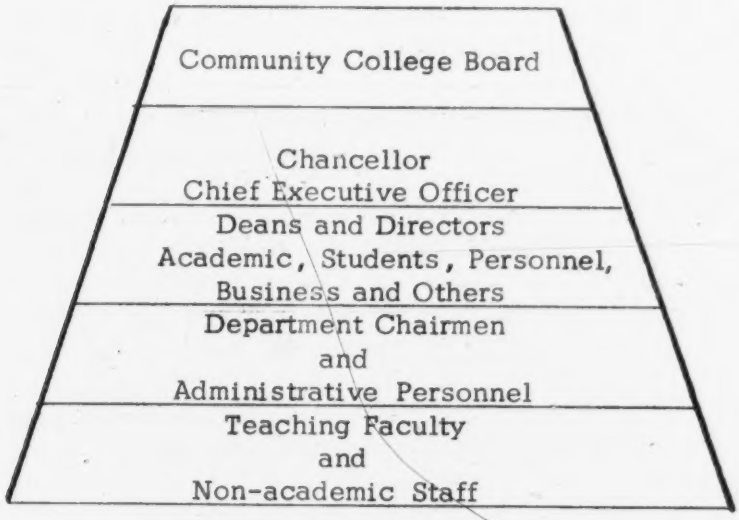
3. The System should assume full responsibility for all new programs created by any Government agency, with the purpose of providing occupational education in the post-secondary level.

4. The System should assume responsibility for the accreditation of occupational training in the postsecondary level offered by private institutions.

5. The Statute, establishing the System should include the guidelines for the coordination of the Public School System, the Private School System, and the Higher Education System, both public and private.

Structure of the System

The formal organization of the System is presented in terms of levels of authority and responsibility, as follows :



1. The composition of the Board is suggested to include:

   a. The Secretary of Education
   b. The Secretary of Labor
   c. Industrial Development Administration
   d. Puerto Rico Manufacturers Association
   e. The Hospital Association
   f. Retailers Association
   g. Clerks and Salesmen Association
   h. Private Institutions
   i. Local school system
   j. Workers Unions
   k. Public interest

2. Duties and functions of the Board, the Chief Executive Officers, and all other Administrative Directors and personnel, are detailed in the Report.

3. The Board, following the guidelines of the law, should establish the working procedures in relation to:

a. Administration, operation and control of public educational institutions, existing and to be created, for occupational education.

b. Definition of instructional plans and goals in occupational education.

c. Allocation of funds: State, Federal, Local, Student's fees, etc.

d. Coordination with the regular school system and the Higher Education Institutions.

e. Accreditation of private institutions offering occupational courses.

f. Location of facilities for a broad distribution of occupational education offerings.

g. Students' admission and regulations.

h. Records and reports.

The Board, through the proper means should provide for an effective organization of the curriculum developed among job requirements, skill requirements, technical and practical knowledge, and a balanced and flexible general education.

The Board, through the proper means, should also provide for an effective evaluation of the achievement, orientation of students, and follow-up of graduates.

SUMMARY AND CONCLUSIONS

The biggest advantage this plan would provide in respect to coordination and efficient use of what is available is that it brings under one administrative body the control of all public funds, both state and federal, marked for post-secondary education. This central control would get Puerto Rico better organized to benefit from whatever comes from legislation, thus maximizing the use of existing resources.

The nucleus of the System recommended was envisaged to be the present two-year Regional Colleges of the University of Puerto Rico, the Technical Institutes of the State Department of Education and the Capital City, and other regional and community colleges of the private institutions of higher learning. Up to now, there is not a master plan for their expansion, nor a full blown possibility of reducing duplication.

Rigid, but flexible standards, may be established to produce highly skilled craftsmen and technicians to meet the requirements of modern industry.

Facilities of private institutions, as well as plants, can be made more useful for training, thus having an interchange of the public and private sectors for the educational enterprise.

Fomento (Industrial Development Administration) efforts will receive a big boost, in having a connecting link, well defined, between Fomento and technical or post-secondary occupational education.

The implementation of this plan will have far reaching implications. It will provide extension of educational opportunities for job training; will result in a more meaningful arrangement of man's life when he has the means of earning a living for him and his family; will combat illiteracy and leisure. In fact, it will result in building up a populace more truly democratic.

APPENDIX No. 2

Puerto Rico

ACVTE BULLETIN

Puerto Rico Advisory Council

on

Vocational and Technical Education

January	1972
February	1972
March	1972
April	1972
May	1972
June	1972

PUERTO RICO
ACVTE BULLETIN

Department of Education

San Juan, Puerto Rico

Edited by José R. López

January, 1972

NEW LIGHT

This Bulletin is started to bring the latest news and developments in Vocational and Technical Education, both in Puerto Rico and in the States and abroad. It will inform the members of the Advisory Council as well as other persons interested in Vocational Education of the trends, efforts, opinions and information as issued from different sources. For example, the Manpower and Vocational Education Weekly always brings the latest news of the Nation the different programs of Vocational and Technical Education of the Department of Education of Puerto Rico issue valious information, statistics and ideas on their development.

All these will bring new light, new insight, new meaning to the tasks of the members of the Advisory Council. Their participation and contribution will be highly appreciated.

Dr. Fred V. Soltero
Chairman

VOCATIONAL EDUCATION IS MAYOR CONCERN OF SECRETARY OF EDUCATION

The Secretary of Education, Dr. Ramón Mellado, has issued a Circular letter to all school administrators, announcing that starting on February 1st, 1972 a big program of vocational training will be initiated for out-of-school youths.

Courses in trades and industry, retailing and distribution, as well as commercial courses will be opened after school hours in all vocational and high schools to teach a total of 2,000 young persons who are unemployed and within the ages of 16 to 21 years. Students will receive an allowance of $40.00 per month for personal expenses.

INDUSTRIAL ARTS IS APT TO RECEIVE FEDERAL FUNDS

With the new trend of creating what is called "career education" out of the vocational courses, Dr. Sidney P. Marland, Jr., U.S. Commissioner of Education, has suggested a restructuring and expansion of Industrial Arts around career education. In that new role, he assured that Industrial Arts will have funds available under the Vocational Education Act of 1963.

In a recent meeting with the Executive Director of the American Industrial Arts Association, a Guidelines Writing Committee was appointed to work close to the U.S.O.E. for this purpose. "Industrial Arts", they said, "together with guidance and counselling, offers excellent opportunities for students to engage in meaningful activities that will assist them in choosing and planning a career".

Career education is a blending of vocational, general and college-preparatory education into an entirely new curriculum. Federal funds for research projects on career education are already underway for all the States.

NIXON EXTENDS THE U. I. BENEFITS

In addition to the 30-week total under the 1970 law, President Nixon on December 30, 1971 signed into law a bill that would provide an additional 13 weeks of benefits to jobless workers in states with particularly severe unemployment. Effective immediately, and extending until June 30, 1972, the additional 13 weeks of benefits will apply in 11 states right now -- Alaska, California, Connecticut, Maine, Massachusetts, Michigan, New Jersey, Rhode Island, Vermont, Washington, Nevada and Puerto Rico. States have to have an unemployment rate -- including both insured workers and those who have exhausted their benefits -- of at least 6.5 percent for 13 weeks to qualify the unemployed workers for the new 13-week extension. This brings up to 52 weeks the U.I. benefits in Puerto Rico.

ADVISORY COUNCIL MAIN FUNCTIONS

1. Advise State Board on the development of policy matters and program planning.
2. Evaluate efforts and results of programs, services and activities planned.
3. Report on the effectiveness of vocational education with recommendations for improvement.

Advisory Council on Vocational and
Technical Education - Room # 706
Department of Education Building
Hato Rey, Puerto Rico 00919

PUERTO RICO
ACVTE
BULLETIN

Department of Education

Edited by José R. López

San Juan, Puerto Rico

February, 1972

COUNCIL THANKS FORMER EXECUTIVE DIRECTOR

On the occasion of the first meeting of the year, the Advisory Council on Vocational and Technical Education approved a "Resolution" presented by our President, Dr. Fred V. Soltero, thanking our former Executive Director, Mr. Antonio Figueroa-Colón, for his services. The "Resolution" reads as follows:

> "Upon completion of the agreement through which our colleague, Don Antonio Figueroa-Colón, gave valuable services as Executive Director of this organization we wish to make public acknowledgement of his dedication, enthusiasm and genuine interest on behalf of the progress and development of Vocational and Technical Education in Puerto Rico.
>
> We are grateful to Don Antonio for his example. We are hopeful that, although in different dimensions, the State Advisory Council on Vocational and Technical Education of Puerto Rico, may benefit from his experience and recommendations in the important task it has to perform."

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NEWS

Mr. José A. Liceaga, member of the Advisory Council on Vocational and Technical Education and Personnel Director for Chace International, has been elected President of the Puerto Rico Chapter of the American Society of Personnel Administrators. Congratulations.

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Dr. Fred V. Soltero, President of the Advisory Council on Vocational and Technical Education has been appointed Chancellor of the University of Puerto Rico, Mayaguez Campus. Dr. Soltero was the former Chancellor of the Regional Colleges of the University. The Mayaguez Campus comprises the School of Engineering, the School of Agriculture, the School of Nuclear Development, and the Technical Institute, as well as the Agricultural Experimental Station and Agricultural Extension Services. This is a job for a big man like Dr. Soltero.

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PRESIDENT NIXON MESSAGE TO CONGRESS

In the State of the Union Message delivered to Congress on January 20, 1972, President Nixon urged for an "intensified Federal effort" to the following programs dealing with Education: develop model programs for career education, enactment of an Emergency School Aid bill to help local districts, approval of a National Institute of Educational Research and Development, a National Foundation for Higher Education to support innovations, and the study of "Federal value-added tax" as a substitute for local property taxes for financing education.

CONSTRUCTION COMMISSION BOOST NATIONAL EDUCATION.

The U.S. Construction Industry Collective Bargaining Commission formed at the request of the President, has developed and endorsed a program to strengthen vocational education in all the States, as has been released by the U.S. Department of Labor. The program, devised by a working group chaired by the Under Secretary of Labor, focuses on strong, active involvement of local unions and contractors in program development and operation. Support for the processes, functions and occupations of man-made construction will be encouraged.

One of the most far-reaching aspects of the program concerns the linkage between vocational education and apprenticeship. Cooperative work-study programs and local unions and contractors associations will be expected to emphasize dignity of work, enthusiasm, and personal growth and adjustment to work situations. The major concern is to redress the imbalance caused in many communities between the college-bound education and the vocational programs. Active participation on Advisory Councils on Vocational and Technical Education by union and contractor leaders, promotion of credit of advanced standing in apprenticeship programs, and revision of policies by labor unions to foster cooperative vocational education programs, are among the major elements of the proposal.

A report on "Vocational Education and the Construction Industry" will be prepared and widely distributed. A procedural document to assist local unions and educators in establishing cooperative programs will be developed.

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MORE FEDERAL FUNDS ALLOCATED FOR VOCATIONAL AND TECHNICAL EDUCATION

From a supplemental allocation of nine million (9,000,000) from the discretionary funds of the U.S. Commissioner of Education, Puerto Rico will receive $162,778. The purpose is to establish meaningful, comprehensive and well developed career education projects, with a strong guidance and counselling component. Each project is expected to develop, test or demonstrate one or more of the following programs:

a. Increase the self-awareness of the students and develop in each student favorable attitudes about the personal, social, and economic significance of work.
b. Increase the career awareness of students at the elementary school level in terms of broad ranges of options open to them in the world of work.
c. Provide career orientation and meaningful exploratory experience to students at the junior level.
d. Provide job preparation programs in a wide variety of occupational areas to secondary and post-secondary students, with special emphasis on the utilization of work experience and cooperative education.
e. Insure the placement of all students in either (1) a job, (2) a post-secondary occupational program or (3) a baccalureate program.

It is expected that the implementation of these projects will be a cooperative venture of Federal, State and Local School Districts. The design of the projects should have transportability to other schools or districts. Specifications for procedures are included in the Guidelines sent by the U.S.O.E.

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FEDERAL BUDGET FOR EDUCATION

For 1972, a new "terminology" has been used in the preparation of the Federal Budget for Education. Most budget funds are presented under a "New Obligatory Authority" (NOA), which will facilitate the revenue sharing for different programs. Five broad areas with total NOA estimates are presented, but transfers may reflect impacts when desirable.

The 1973 Federal Budget for Vocational and Adult Education shows a $26.9 million decrease from 1972. Total Budget for Vocational and Adult Education is $542,127,000. The decrease is due to transfer of funds to Career Education, Education Renewal (NFNE) and National Institute of Education (Research and Development). Vocational funds granted to the States are not affected; they remain the same as last year.

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SCHOOL POPULATION OF PUERTO RICO (1970)

Total Population - - - - - - -		2,712,033
Urban - - - - -	1,575,691	
Rural - - - - -	1,136,342	
Public Schools - - - - -	679,744	
Elementary - -	444,941	
Secondary (Junior & Senior)	234,803	
Private (Accredited) Schools - - - - - - - - -	88,609	
Voc. & Tech. Programs - -	182,534	
Post-secondary Programs -	1,324	
College enrollment- - - -	47,596	
Private Trade and Business Schools - - -	3,012	

* * * * * * * * * * * *

ASSOCIATE DEGREE IN TECHNOLOGY

A bill has been presented in the Legislature by Governor Luis A. Ferré to authorize the Secretary of Education of Puerto Rico to issue Associate Degrees in Technology to students of the two Technological Institutes run by the Department of Education in San Juan and Ponce.

These two Institutes accept only high school graduates with the highest qualifications and vocational interest with an equivalency of the entrance requirements to university courses. The instructors have a high level of academic preparation and experience in industry and the equipment of the Institutes compares favorably with other institutions of the same level.

The Associate Degree in Technology, has been argued, will be a deserved recognition to the work being done, as well as an open door to the graduates to get jobs more in accordance with the preparation they are receiving. The Institutes, according to the bill presented, will continue to be classified as Post-secondary Education, under the State Department of Education, and not as a part of the University organization.

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EMPLOYMENT DATA OF PUERTO RICO (1970)

Total Employed - - - - - -		748,900
Men - - - - -	525,900	
Women - - -	223,000	
Areas of Employment		
Agriculture- - - -	76,000	
Distribution - - -	175,952	
Health - - - - -	8,226	
Home Economics-	23,000	
Office - - - - - -	26,722	
Technical - - - -	10,000	
Manufacturing & Construction - -	229,000	

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PUERTO RICO
ACVTE
BULLETIN

Department of Education

San Juan, Puerto Rico

Edited by José R. López

March, 1972

INNOVATION OR CHANGE (PDK - Feb., 1972)

Initiating a new order of things is difficult, doubtful and dangerous. The successful innovator is one who can effectively manipulate the variables and strategies to cause change for improvement. He is the person who approaches the task of provoking changes in people, including himself. Changing people is not an academic exercise that can be accomplished by memoranda. It is a process that tampers with people's cherished values. Innovation often represents a real threat to the "heaith" of the individuals, and is met with blind resistance.

Nevertheless, research shows that 3% of real innovations are fired out, 13% have very early adopters, 34% have adopters in the process, another 34% have late adopters, and 16% have very laggard adopters.

Thus, the problems are: Where to innovate, when to innovate, and how to innovate. Probably what is needed is to channel the energy of the "change agents".

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SPECIFICATIONS FOR AN EDUCATIONAL SYSTEM OF THE FUTURE (PDK - Feb., 1972)

Restructuring the Educational enterprise to meet the demands of the future requires some specifications for accomplishment. Such as:

1. School system must be able to deal with large number of students.
2. Accomodate itself to new and different population patterns.
3. Be capable of utilizing new technological developments.
4. Capitalize on many other educational forces, which exist in society.
5. Be capable to bring learners in contact with a wide variety of realistic learning experiences
6. Accomodate itself to change in the wide resources available to man.
7. Capable of coping with increased amounts of information.
8. Be concerned with the accountability and economy of learning.
9. Emphasize the development of skills.
10. Emphasize human relations..
11. Help in individuals, regardless of their characteristics, to release their potentials.
12. Help individuals to look at work as enjoyable, challenging and meaningful to accomplish their life purposes.

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PRESIDENT NIXON NAMES FEDERAL REGIONAL COUNCILS (MVEW - Feb., 1972)

Federal Regional Councils have been established with the purpose of coordinating Federal grant programs with the State and local governments. Councils are composed of the Regional Directors of the Departments of Labor, HEW, Housing and Urban Development, Transportation, and Office of Economic Opportunity, Environmental Protection Agency, Law Enforcement Administration, Office of Management, and Office of the Budget.

Functions of these Councils will be to develop integrated plans with local executives, encourage joint applications for related programs, expedite interagency conflicts and coordination problems, evaluate programs, allocate resources to better respond to the needs of people, and develop administrative procedures and mechanisms for intergovernment coordination and cooperation.

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ANNUAL EVALUATION REPORT

The U.S. Commissioner of Education, Dr. S.P. Marland, Jr. has changed the date to December 1, 1972, for the Advisory Council to submit the Annual Evaluation Report on the effectiveness of VTE programs and services.

Another change is that response in writing to each of the recommendations of the Advisory Council for the ensuing year shall be accompanied by the State Board in developing the next State Plan for VTE.

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NEW NACVE MEMBERS

President Nixon appointed seven new persons to replace members of the National Advisory Council on Vocational Education. The new appointees are: John A. Rhodes of Ohio, David Van Alstyne, jr. of New Jersey, Martha G. Bachman of Delaware, Jo Ann Cullen of Pennsylvania, Marvin J. Feldman of New Jersey, Sal B. Hoffman of Pennsylvania, and Luis M. Morton Jr. of Texas.

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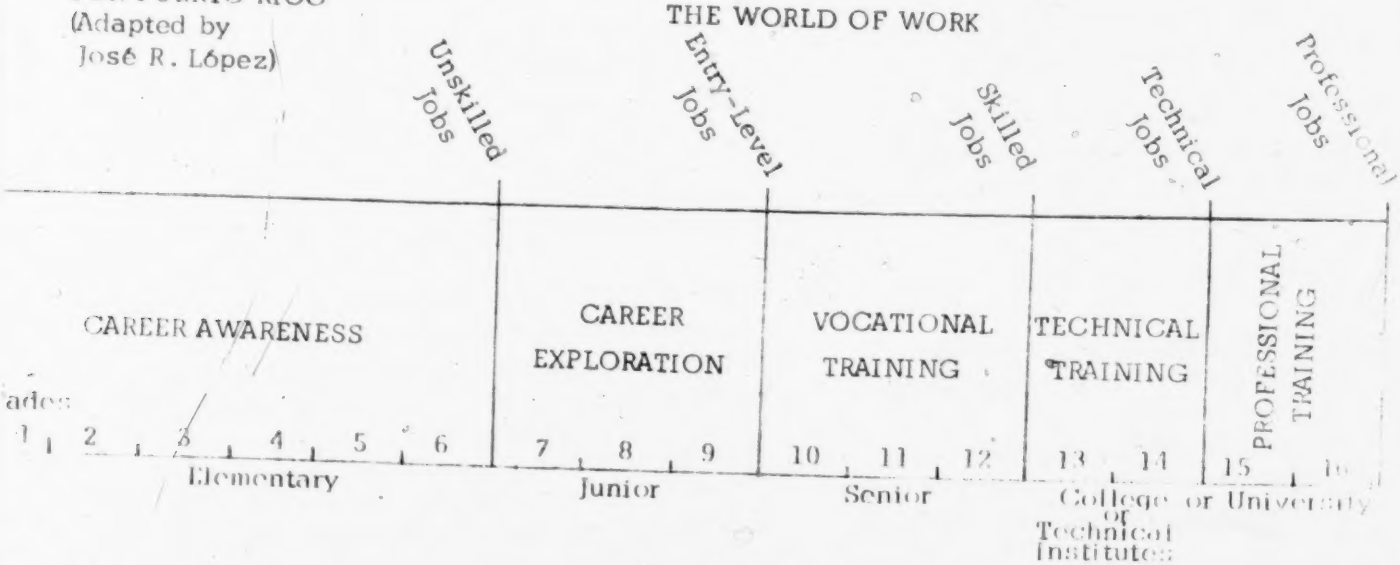
FACTS ABOUT PUERTO RICO

1. The Planning Board estimated the total labor force at 854,000 workers in 1970. Of these, 761,000 were employed and 93,000 were jobless. An unemployment rate of 10.9 %.
2. The young people ages 16 to 21 years - 30.9% were unemployed in 1970, or about 34,000 youngsters.
3. About 16% of the vocational graduates were unemployed in 1970, or about 4,000 youngsters. It is estimated that unemployment rate among non-vocational youth is 36% , or about 30,000 youngsters.

CAREER EDUCATION MODEL
FOR PUERTO RICO
(Adapted by
José R. López)



PRESIDENT NIXON SUPPORT OF NACVE

Following is the reply of President Nixon to Mr. Lawrence Davenport, Chairman of the National Advisory Council on Vocational Education, concerning the work of the NACVE:

Dear Mr. Davenport,

It was thoughtful of you to write me about the work the National Advisory Council on Vocational Education is doing with Commissioner Marland on the emerging concept of career education. Your support of the State Advisory Councils on Vocational Education for strengthened vocational and occupational education programs will continue to be of great importance to the Administration.

As you know, increased career education opportunities are an essential part of our program to bring renewal and reform to the Nation's educational system. Our initiatives in career education seek to forge stronger ties between industry and the schools so that, together, we may build career options and the career preparation opportunities for Americans of all ages.

The support of the National Advisory Council on Vocational Education is extremely important to this effort. Your counsel and your combined assistance is deeply appreciated as we implement this new program.

With my best wishes,

Sincerely,

Richard Nixon

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Dialogue on the ultimate meaning of "Career Education" will start with a series of 16 national invitational workshops beginning in March in Washington, D.C.

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AGNEW DEFINES CAREER EDUCATION
(MVEW - Feb. 1972)

At the Annual Conference of the American Association of School Administrators held in Atlantic City last February, Vice-President Spiro T. Agnew gave his own concept of "Career Education". He said that the concept has already come to mean many things to many people, some of them contradictory. For him "Career Education" means the following:

1. "Career education is not a high sounding new name for the same old skills training we have always called vocational education
2. 'It is for every child, beginning in his first school year and following him as far as he goes in the education system.
3. 'It is a way to provide career awareness in the early grades and career preparation in the upper grades that continues at an ever-increasing level of sophistication until every student is equipped to enter the occupation of his choice -- limited only by his personal ability.
4. 'Career education does provide vocational training -- if a trade is what a student wants. And it is a realistic vocational training, keyed not to the old woodworking shops with their outdated equipment, but to the intricate skills demanded in today's labor market and tomorrow's.
5. 'It is not only for children and young adults. It is also for adults of all ages, for anyone who wants to enhance his occupational and earning potential.
6. 'Career education favors no ethnic group to the exclusion of any other. It simply recognizes that concentration and motivation need to be ignited early in life -- or rekindled later--so that every individual can pursue the occupation and life style of his or her choice.
7. 'It is not a program cast in bronze from which no state or school district or adult training effort can deviate. Every state, every community, has a population, an occupation market and an educational system that differs in some degree from every other."

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PUERTO RICO
AC VTE BULLETIN

Department of Education — San Juan, Puerto Rico

Edited by José R. López — April, 1972

PLAN FOR COMMUNITY COLLEGE EDUCATION

The Puerto Rico Advisory Council for Vocational and Technical Education contracted the services of Dr. Thomas E. Barton and Dr. Don C. Garrison, directors of Technical Education centers in South Carolina, U.S., to formulate a plan for the organization of Technical Colleges in Puerto Rico. As a result, a "Plan for Comprehensive College Education in Puerto Rico", was produced.

The study contains ideas and recommendations that require careful consideration by the educational leaders of Puerto Rico. Some ideas require legislative action, others need re-allocation of funds. The main recommendation is a new educational structure, by which the present Regional Colleges of the State University and the Technical Institutes of the State Department of Education shall be governed by a Board of Community College Education. Elementary and Secondary Education (K-12) will remain under the State Department, and the University System will remain under the Council of Higher Education for professional training. The three educational entities shall be coordinated by a State Board of Education to deal with the whole school system of Puerto Rico.

The Study has great parallelism with the Career Education Model presented by us in the AC-TVE bulletin, March 1972 issue, which shows that for this "World of Work", the elementary grades should stress on career awareness for unskilled jobs, the junior high school on career exploration for entry-level jobs, the senior high school in vocational training for skilled jobs, the technical colleges on specialized training for technical jobs, and the university on higher education for professional jobs.

Copy of the Report has been distributed among many educational and government leaders in Puerto Rico for their comments.

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NEW ECONOMIC AREAS

The Secretary for Transportation of the United States, Mr. John A. Volpe, has created centers of economic development in the States and Puerto Rico, pursuant to Federal Aid Primary System Act of 1970. Three centers have been approved for Puerto Rico: Aguadilla, Guayanilla and San Germán.

The purpose of this new program of the Department of Transportation is to build roads and other means of transportation to localities which can be revitalized and developed into production areas. The new roads will attract new industries and commercial enterprises, thus reducing unemployment and creating a more diversified economy.

A plan for the development of these areas has been submitted by Governor Ferré, to be worked out by the Highway Authority and several other Government Departments and Agencies. Vocational and Technical Education facilities need to be provided. (O.P.R.W. - Jan. 1972)

IMAGE OF VTE

As a means of upgrading the image of Vocational Education the Department of Education is holding a statewide celebration for VTE graduates who have distinguished themselves in industry, commerce, agriculture and technical and vocational enterprises. A special program, to confer awards and other types of recognition, will be held in San Juan on May 21, 1972.

A survey of all graduates will be made, recording their contribution to the economic growth of the Island. Support from local agencies, commerce, industry and employers is encouraged. The Advisory Council endorses this activity as a means of bringing up the social status of Vocational Education in Puerto Rico.

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MORE ON CAREER EDUCATION

The U.S. Office of Education has suggested fifteen occupational clusters to be used in developing Career Education, as responsive to the needs of the people:

Business and Office
Marketing and Distribution
Communication and Media
Transportation
Environmental Control
Agri-business and Natural Resources
Health
Recreation and Hospitality
Manufacturing
Construction
Public Service
Personal Services
Fine Arts and Humanities
Consumer and Home-making
Marine Science

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EFFECTIVENESS OF VOCATIONAL EDUCATION

A comprehensive evaluation of the effectiveness with which the needs of the people (youngsters and labor force) have been served should include: (1) the Vocational Programs offered by the Department of Education, (2) the vocational and technical offerings of Private Schools and Regional Colleges, and (3) the manpower programs sponsored by other agencies and private industry.

A study of these programs and services should indicate the type of programs available to the people, the operational structure, the performance of the participants, and the current enrollment. It is imperative to determine the influence on Vocational Education of the changes occuring in our economy, as well as in the labor supply and demand. Data should be compiled with the latest information available from all sources, thus indicating the trends of occupational training with relative adequacy.

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NACVE URGES FEDERAL FUNDS

To reach the goals set by President Nixon in Vocational-Technical education and training, the National Council has recommended a minimum of $798,000,000 to be appropriated to the States in Fiscal Year 1973. This figure is the cumulative national amount computed from what each state (including Puerto Rico) has estimated the vocational-technical programs would cost.

NACVE figure is $310,000,000 more than what has been planned by the U.S. Office of Education for this purpose. NACVE is to testify before the Appropriations Committees that are considering the budget requests.

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PUBLIC HEARING

The Advisory Council on Vocational and Technical Education held a public hearing on March 23, 1972, in Bayamón, Puerto Rico. It was a joint activity with the State Board for Vocational Education. Its purpose was to get the views and ideas of all interested persons regarding the vocational offerings in Puerto Rico. Ample information was given in the local papers inviting people to participate.

The hearing was successful. Although the attendance from industrial, commercial and agricultural enterprises was not large, the ideas and recommendations presented were very useful. Participants were given free opportunity to express themselves and make comments. Directors of VTE programs who were present gave some orientation regarding the highlights of vocational education during the current year.

The recommendations presented for improving VTE in Puerto Rico may be summarized as follows:

1. A new name, and separate funds and organization for Occupational Home Economics are imperative. Homemaking in Home Economics is quite different from Occupational Home Economics. The first, comprises general education courses pretending to prepare consumers, home makers and housewives, while the second, comprises industrial skills in Food Management, production and service. Even housekeepers, hotel maids, catering and bar tenders need occupational skills different from those of housewives. These occupational courses should be taught by instructors with good experience in industry and should be made attractive to male youngsters who are not willing to attend Home Economic courses. There is a great demand for these occupations in the present labor market.

2. Diesel Mechanics shops should be updated in equipment and materials. Training should be upgraded. Instructors should come more in contact with industrial practices, since present Diesel equipment is very sophisticated. U.S. Industry of Puerto Rico has prepared an intensive course for training people in using the "Caterpillar". They are willing to cooperate with the schools in these modern techniques.

3. A study should be made of the machine shop courses. The skills involved require much practice and accuracy. It is like sculpturing in iron, steel or bronze. It is an art and a trade. These courses include several specializations after the general mechanics course. The study should be made with the purpose of determining (1) the diversification of the content, (2) the duration of the courses, (3) the amount of practice and technology required, and (4) the training sequence.

4. To delete from the Electrical Appliances course the units on Refrigeration and Air Conditioning. Employers require a license to hire personnel for these specialties. The course on Refrigeration and Air Conditioning affords the student to obtain the license.

5. Conduct periodic occupational surveys by geographical areas served by the Vocational Schools to open new courses needed or delete courses of little occupational demand. This is a most in areas of rapid industrial growth and change, as Bayamón and others.

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VOCATIONAL EDUCATION NOT WELFARE

If you give a man a piece of bread,
he will have a meal;
If you teach him how to make bread,
he will have a living.

SOCIAL SECURITY CARDS

U.S. Congress is approving a plan to require the issuance of a Social Security card to each child upon his entry into the first grade, to immigrants upon their entry into the country, and to all welfare applicants who do not have such cards.

The idea is to make the Social Security number an universal form of identification.
(MVTW, March 15, 1972)

Advisory Council on Vocational and
Technical Education Room 706
Department of Education
Hato Rey, Puerto Rico 00919

VTE TEACHERS IN PUERTO RICO (1970)

Agriculture	155
Distributive Education	152
Health Occupations	55
Home Economics	720
Office Education	321
Trade and Industry	539
Technical Education	58
Adult Voc. Education	80
Special Needs Education	118
Guidance Counselors	262
Industrial Arts	634
Others	7
	3,101

PUERTO RICO
ACVTE BULLETIN

Department of Education — San Juan, Puerto Rico

Edited by José R. López — May, 1972

NEW AC MEMBERS

The Governor of the Commonwealth of Puerto Rico, Hon. Luis A. Ferré, has named four new A.C. members for a three-year period in lieu of others whose term expired. They represent different endeavors as follows:

Mrs. Isabel Rivera, School Superintendent, representing an area of rapid industrial growth;
Mr. Antonio Báez Bermejo, Director of the San Juan Technological Institute;
Mr. Carlos A. Molina, Industrial Consultant, and
Mr. Peter Kryzanowski, presently in agri-business and formerly Tower Chief of International Airport

Appointments for an additional term were also extended to three other members:

Dr. Fred V. Soltero, Chancellor University of Puerto Rico, Mayagüez Campus, and Chairman of the Council;
Mrs. Francisca Borges, School Superintendent, representing an area of slow industrial development, and
Mr. Pelegrín Busquets, Director Technical Institute, College of Engineering.

The Council is composed of 21 members from diverse backgrounds in labor, management, government, and education.

NEW TECHNOLOGICAL COLLEGE

The Community Technological College of San Juan, Puerto Rico, has been opened recently, with a total enrollment of 200 students, distributed into seven trade and paraprofessional courses. San Juan Mayor, Hon. Carlos Romero Barceló, announced that the school has been organized in the record time of only 13 months. The Secretary of Education, Dr. Ramón Mellado, and members of the Higher Education Council participated in the opening services. It is the first educational institution of this level established in Puerto Rico by a local (Municipal) government. All other institutions are either State or privately funded.

The new institution has started with a budget of $300,000.00, and twelve faculty members, housed in a remodeled building in Santurce. Classrooms, shops, cafeteria, library, and recreational facilities have been provided.

The program of study is characterized by its flexibility. Courses are offered by clusters in Electronic Technology, Electrical Technology, Computers Technology, Draftsman and Design Technology, and a general course known as Pre-technology. Courses are one or two years duration, but students can advance at their own pace. Applicants went over 500. "There is a great demand for this kind of training," explained its director, Dr. Wilfredo Miranda

PUERTO RICO - STATISTICS ON PUBLIC SCHOOL SYSTEM*
1970-71

A. School Enrollment - Day School

Public Schools	- 672,299	students
Private Schools	- 88,609	"
	760,908	"

These represent 82.5% of the total school population (6-18 years).

School Enrollment -

Vocational & Technical	- 182,534
Adult Education	- 63,711

B. School Teachers - Day School

Classroom Teachers	- 24,251
Administrators & Supervisors	- 2,235
Average number of pupils per teacher	- 30.9
Average number of teachers per administrator	- 10.9

C. School Retention

Average number of years of schooling completed - 5.96

Averages, by Geographical Zones in Puerto Rico:

Metropolitan	- 7.88 (San Juan)
Southern	- 5.49 (Ponce)
Northern	- 4.74 (Arecibo)
Western	- 4.74 (Mayagüez)
Eastern	- 4.74 (Humacao)

From every 100 students that entered first grade in 1958-59

61.1 completed 6th grade in 1963-64
45.3 " 9th " " 1966-67
37.2 " 12th " " 1969-70
7 or 8 will complete University studies in 1974 (estimated)

D. Population

Total population (197) - 2,689,932
Total unemployment -- 10-12%
Unemployment 16-24 yrs. youth - 24%
Population 16-24 years out of school or unemployed - 70,000 (estimated)

E. Budget for Public Instruction

Operational-State Funds-	$223,114,735
Federal Funds-	41,516,242
Construction-State Funds-	22,020,000
Federal Funds-	4,247,000
Total.....	$290,893,057

F. Family income (1969)

Less than $3,000 -	244,919 fam. - 41.8%
$3,000 to $10,000 -	240,232 " - 40.9%
More than $10,000-	100,781 " - 17.2%
Total.....	585,932 families

Average income per family - $4,815.00

Vocational and Technical Centers
(See map on next page)

Vocational High Schools.....	8
Comprehensive High Schools.....	12
High Schools with vocational offerings.....	60
Technical Institutes (State).....	2
Technical Institutes (Municipal)..	1
Regional Colleges (University) with technical offerings **.....	8
Manpower Multiple Skills Centers-	10
Special Vocational Centers for Adults	70
Agri-Business Centers.....	10

*Report to the Governor by the Secretary of Education of Puerto Rico (October 7, 1970)

**(Regional Colleges not under State Department of Education)

MORE ON CAREER EDUCATION

"Career education will begin as early as kindergarten, through revised curriculums that relate reading, writing, and arithmetic to the varied ways by which adults earn a living. As a youngster advances into junior high school, he will select three of fifteen occupational 'clusters'... By senior high school he will concentrate on one cluster, developing sufficient skill in a specific occupation to qualify for a job'...

'During his entire educational career, the student will receive guidance and counseling in developing awareness of his own interests, abilities, and needs; in developing attitudes about the personal, social, and economic significance of work; and in developing decision-making skills and an attitude of planfulness.

'All students will have an opportunity to enjoy actual work experience during their high school years through cooperative arrangements with business, industry, and public institutions and agencies. Yet each student program will retain sufficient flexibility to enable him to switch to a related occupation later with a minimum of additional training. In addition, each student in a career education program will always retain the option of going on to higher education."

(Dr. Sidney P. Marland, U. S. Commissioner of Education)

Advisory Council on Vocational and Technical Education Room 706
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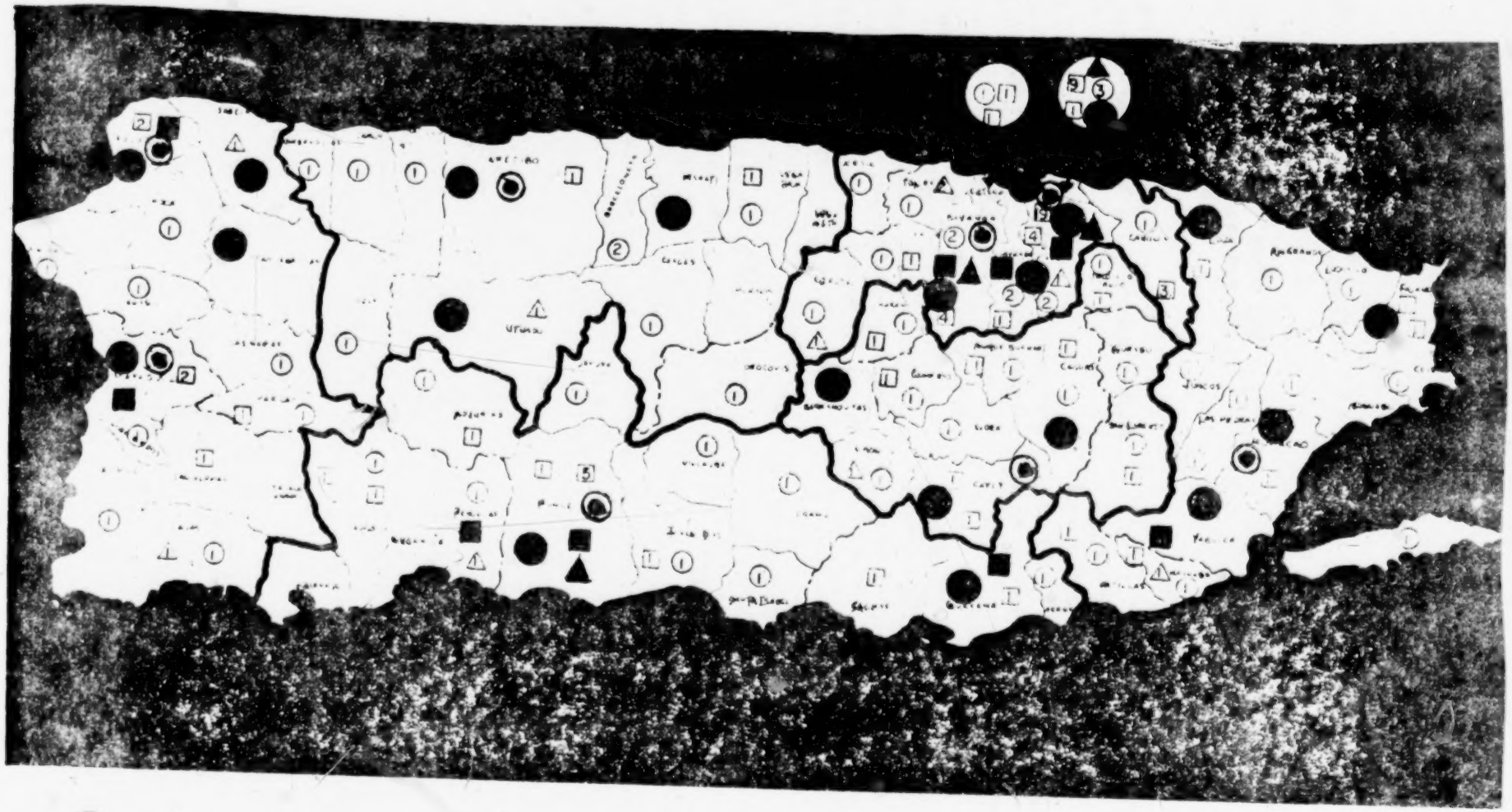
BULLETIN EXCHANGE

The mailing list of the Puerto Rico ACVTE Bulletin is near 500 already. It goes to members of the Advisory Council, members of the Board for VTE, members of the State Board of Education, Department of Education Central Office staff, Vocational Education staff, School Superintendents, and Vocational School Principals. It goes also to many Commonwealth and Municipal government agencies, educational institutions of regional, community and higher education, vocational private schools, selected industrial, commercial and agricultural enterprises, civic groups, legislators, and the Governor of Puerto Rico.

The Bulletin is reaching all Chairmen and Executive Directors of National and State Advisory Councils on VTE, the U. S. Office of Education staff, and the U. S. Office Regional staff. It is sent also to several U. S. Government agencies, some Universities and Community Colleges in the mainland, and the Representative of Puerto Rico in Congress.

We appreciate the many compliances we have received from people reading the Bulletin. Many others have sent their own in return. We are very pleased with this exchange. Thank you.

VOCATIONAL AND TECHNICAL CENTERS IN PUERTO RICO



- Vocational and Comprehensive High Schools
- Manpower Multiple Skills Centers
- Technological Institutes
- Regional Colleges (University System) with Technical offerings
- High Schools with some Vocational offerings
- Special Vocational Centers for Adults
- Agri-Business Centers

PUERTO RICO
AC VTE BULLETIN

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Edited by José R. López — June, 1972

Eng. Orlando de Aragon

NEW AC CHAIRMAN

The Advisory Council on Vocational and Technical Education selected a new Chairman, upon completion of Dr. Fred V. Soltero's term.

The new Chairman, Mr. Orlando de Aragón, is a distinguished Mechanical Engineer, graduated from M.I.T. (Massachusetts Technical Institute) and in Business Administration from Boston University. Presently he is the Assistant Executive Director for the Land Administration Corporation of the Commonwealth of Puerto Rico. His assignment with the Land Administration Corporation is to bring to the attention of the Governor the reality of the economic situation of the sugar industry in Puerto Rico and make plans for its development and improvement.

Previously, Mr. Aragón has worked for twenty years with the Puerto Rican American Sugar Refinery of which he became its Executive Vice-President. Also he has acted as director of the Puerto Rico Sugar Producers Association, as director of "Banco de Ponce", and as consulting staff member of Ernst & Ernst, in Brazil, Columbia and Puerto Rico. He served in Japan and the Philipine Islands in the Civil Engineering Corps of the U.S.Navy, and worked as Export Sales Engineer for the Greenfield Tap and Die Corporation in Cuba and Mexico.

The Advisory Council also selected Mrs. Virginia T. Belaval as Vice-Chairman Mrs. Belaval is a distinguished educator working at present with the State Department of Education as head of Planning and Development. As such, she is in an excellent position to coordinate the Vocational Education with the General Education and the Adult Education programs in Puerto Rico.

A CALL FOR CHANGE

The National Advisory Council on Vocational and Technical Education has produced a Report on "COUNSELING AND GUIDANCE: A CALL FOR CHANGE" which points out major concerns, such as: a) Counselors are more competent in guiding persons toward college entrance than toward occupational education, b) Most counselors know very little about the world of work outside of education, c) Counselors still persist in using the one-to-one counseling technique rather than group counseling approaches, d) Counselors are still evaluated in terms of cases closed rather than quality of service provided, and e) Counselors are assigned other teaching duties as an economy measure.

The Report makes several recommendations to improve counseling services in the School Systems, such as:

1. Departments of Education should require work experience outside of education for school counselors. Individuals with rich background in business, industry and labor should be infused into the counseling system.
2. Counselor education institutions should require a course in Career Education and a "practicum" devoted to on-site study of the business-industry-labor community.
3. Career Education, job placement and follow-up services should be considered major parts of counseling and guidance programs.
4. School Systems should commit themselves to the importance of providing sound, scientific and effective counseling and guidance services to all individuals.
5. Efforts should be made to provide more accurate, timely data to counselors regarding vocational and technical training and job opportunities, including a computerized guidance system.
6. Paraprofesional personnel should be trained and employed to work in guidance under supervision of professionally qualified counselors.
7. Efforts should be made to lower the counselor-pupil ratio, while simultaneously encourage more "guidance in groups" to reach all who need counseling and guidance services.
8. State Departments of Education as well as the U.S. Office of Education should create a strong Counseling and Guidance Unit to serve elementary, secondary and post-secondary students as well as adults, handicapped and other disadvantaged persons. (MVEW-June 1972)

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AGRICULTURAL EMPHASIS

Hearings were held in the U. S. Senate to consider whether the nation's land-grant colleges and universities are working for or against creating "livable communities", in the rural areas of the Nation.

Those against, charged land-grant colleges and universities of serving large agri-business interests at the expense of small farmers, farm workers and consumers. They were accused of "total abdication of leadership in agricultural problems", charging that, as a result, "nutrition has fallen by the wayside in automated food production".

Those in favor, argued that the vast system of education, research and extension of the land-grant colleges and universities, have made the farm unit a "viable, economic and human enterprise". "Without the technology advanced by the land-grant colleges and universities, our nation would be one of the most underdeveloped nations on earth." They said "We glory in the service we have rendered the American farm family in freeing it from drudgery and poverty".

No final decision was taken, but it was clear the interest in shifting the emphasis of land-grant colleges and universities from farm management to people, i. e. farmers and consumers.
(HENA - June, 1972)

PUERTO RICO

EMPLOYMENT OPPORTUNITIES RELATED TO VOCATIONAL EDUCATION PROGRAMS

LABOR DEMAND AND SUPPLY SUMMARY [1]

OE Code	Instructional Program	Current Employment	Projected Expansion and Replacement Needs		Projected Labor Supply					
					Vocational Education Output [2]				Other Sectors Output [3]	
		1972	1973	1977	1973		1977		1973	1977
					New	Upgrading	New	Upgrading		
	TOTAL	697,000 [4]	13,000	52,000	23,755	11,825	30,128	15,518	12,868	16,925
01	Agriculture [5]	65,000	-6,000	-24,000	1,715	85	2,076	120	276	No data
04	Distribution [6]	146,000	4,000	16,000	895	10,357	920	13,582	6,800	7,200
07	Health	14,000	1,000	4,000	1,240	362	1,550	400	705	2,120
09	Home Economics [7]	35,000	1,000	4,000	2,572	596	3,461	666	No data	No data
14	Office [8]	117,000	3,000	12,000	5,372	50	6,854	300	2,581	4,005
16	Technical [9]	13,000	1,000	4,000	470		602		706	1,300
17	Trades and Industry [10]	307,000	3,000	12,000	11,491	375	14,665	450	1,800	2,100

1/ Data from Employment Service, the Department of Health, Puerto Rico Planning Board, Department of Commerce, Department of Agriculture and the Economic Development Administration.

2/ Number trained by VE programs available for work to meet labor needs.

3/ No figures available for other sectors output for agriculture, 1977 and home economics, 1973-77.

4/ Professional workers not included (67,000).

5/ Includes farmers, farmer managers, farm laborers and foremen.

6/ Includes proprietors, managers and officials, except farm and sales. Department of Commerce by law is authorized to offer educational training programs for out-of-school youth and adults.

7/ Includes female service workers.

8/ Includes clerical and service workers. A fairly large number of private schools offer office education programs both at the secondary and post secondary level. In office occupations a considerable number of graduates continue advanced studies in the field, and a limited number stay at home or enter the Army.

9/ Includes semi-professional workers. Technical education is also offered at the University of Puerto Rico, Regional Colleges and other private educational institutions.

10/ Craftsmen, foremen and kindred workers, operatives and kindred workers and laborers are included in this category.

NEW PROGRAM ON OCCUPATIONAL PREPARATION

Congress has approved and President Nixon has signed into law the EDUCATIONAL AMENDMENT LAW (s. 651) which, among other things, authorizes a new program of grants to strengthen occupational preparation, counseling and placement, in elementary, secondary and post-secondary occupational education. Funds are to be alloted to the States on the basis of the number of persons sixteen years of age or over. (Title X).

State is required to designate a state agency, representative of post-secondary education, including junior colleges, vocational schools, technical institutes and four-year institutions of higher educations having occupational training.

The Advisory Council on Vocational and Technical Education is charged, by this Law, to have the same responsibilities with respect to the new program as it has under the Vocational Education Act of 1968 with the VTE Programs. (AVA - June 1972)

Advisory Council on Vocational and
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REACTIONS TO REPORT

The Advisory Council sent a copy of the Report PLAN FOR COMPREHENSIVE COLLEGE EDUCATION IN PUERTO RICO, prepared by Dr. Thomas E. Barton and Dr. Don C. Garrison, to a selected number of educators and government leaders in Puerto Rico and the United States. Their reaction was requested.

The Chancellor of the Regional Colleges of the University of Puerto Rico, Dr. Herman Sulsona, recommended to draw a Master Plan for Technical Education. The participation of the University of Puerto Rico, Department of Education, Planning Board, Industrial Development Administration, Department of Labor, Higher Education Council, the State Education Board, Private Colleges and Universities Association, etc. under the leadership of the Advisory Council is suggested.

The President of Catholic University, Dr. Francisco J. Carreras, recommended that the Report be discussed at a meeting of the Universities Presidents' Association, chaired at present by Dr. Sol Luis Descartes, President of the InterAmerican University.

Dr. Michael Russo, Director of Vocational and Technical Education in the U.S. Office of Education, said that the Report is most impressive in view of the present Federal legislation in relation to Community Colleges and Occupational Education.